APPENDIX B

Available Boring Logs and Well Construction Diagrams



0 ft bgs

1.5

GeoSyntec Consultants

200 East Del Mar Boulevard, Suite 250

CONCRETE:

GROUT SEAL:

Cement Slurry with

5% Bentonite by Weight

Pumped through drive casing

1 x 60 lb/bag pre-mixed concrete

Pasadena, California 91105 Phone: (626) 449-0664

WELL CONSTRUCTION LOG

BELOW GROUND SURFACE COMPLETION:

Well Box: Flush-Mounted, Traffic-Rated Steel

Mont.

Well

PW-1

PVC

Screen

480

483

485

510.5

Protective Cover: Locking Well Cap

Boring ID: PW-1

Start Drill Date: 21 May 2004 Finish Drill Date: 28 May 2004

Location: West Casa Grande Drive

Project: 160-Acre Parcel, Rialto, CA

Number: HA0816 Logger: PL Reviewer: KA

Page 1 of 1

Elevation Top of Casing: 1704.48 ft MSL Vert Datum: NGVD-29;

HVC-11 (Elev=1622.84)

Northing: 1880289.14 Easting: 6737216.65 Horiz Datum: NAD-83 Zone 5

DRILLING SUMMARY:

Total Boring Depth: 510.5 ft bgs

Drilling Method: Air Rotary Casing Hammer

Drilling Fluid: Air / Injected Water (Municipal Hydrant)

Contractor: WDC Exploration & Wells Drilling Rig: Peterbilt SpeedStar 30K Telescoping Drive Casing Diameters:

16" to 59 ft bgs 13 3/8" to 199 ft bgs 11 3/4" to 477 ft bgs Tricone Drill Bit Diameters:

14" to 59 ft bgs 12 1/4" to 199 ft bgs 10 5/8" to 510.5 ft bgs

WELL CONSTRUCTION DETAILS FOR MONITORING WELL PW-1:

Total Well Depth: 480 ft bgs

Well Construction Dates: 3 through 8 June 2004

Well Development Date: 17 June 2004

Blank Well Casing:

Virgin, factory-sealed, flush-threaded, 4"-diameter, Sch 80 PVC (from ground surface to 440 ft bgs)

Well Screen Interval:

Virgin, factory-sealed, flush-threaded, 4"-diameter, 0.020" slotted, Sch 80 PVC (from 440 to 480 ft bgs)

Length of End Cap: 0.41 ft

Centralizers (2 total): PVC with metal screws (directly above and below the screen interval)

380 x 94 lb/bag Type II/V California Portland Cement 4" diam 38 x 50 lb/bag Bentonite Gel Blank Sch. 80 ~3,800 gal Water **PVC** 424 **BENTONITE SEAL:** 10 x 50 lb/bag Medium Bentonite Chips Freefall through drive casing ~58 gal Water 30-Minute set-up time 434 TRANSITION SAND: 2 x 100 lb/bag Monterey Sand #2/16 Freefall through drive casing 437 **SAND PACK:** 440 34 x 100 lb/bag Monterey Sand #3 4" diam. Freefall through drive casing 40-ft long. 0.020' slotted Sch 80

TEMPORARY WELLS INSTALLED Approx. **Temporary** Screen Static Well Installation Depth Interval Water Level (ft bgs) $(ft \ bgs)$ (ft bgs) Date PW-1A-T01-444 26-May-04 480 434 - 444 430.98 PW-1A-T02-510 28-May-04 500 - 510 504.15 510

DRIVE SOIL SAMPLES C	OLLECTED	
	Sampling Depth	Sample
Soil Sample ID	(ft bgs)	Date
PW-1A-TO2-486	486	28-May-04

TRANSITION SAND:

1.5 x 100 lb/bag Monterey Sand #2/16 Freefall through drive casing

BENTONITE SEAL:

22.5 x 50 lb/bag Medium Bentonite Chips Freefall through drive casing

~81 gal Water

~40-Minute set-up time

WELL DIAGRAM NOT TO SCALE

NOTES:

This boring was originally identified as PW-1A. However, the boring ID was revised to PW-1 to be consistent with the naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the Remedial Investigation Work Plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

this project and proposed in the project work plan.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

SHEET 1 OF 18

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

							5	SAME	LES	3		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
5 -	ARTIFICIAL FILL Asphalt Surface; 6" thick SAND with GRAVEL (SP-GW): olive brown [2.5Y 4/4]; 10% fine to coarse gravel; cobbles; 80% poorly graded	9-60 5-00			- - - -						07:30 08:00	Borehole telescoping diameters and approximate depths: 16-inch diameter stee casing (0' - 59'), 13 3/4 diameter steel casing (59' - 199'), 11 3/4" diameter steel casing (199' - 477'), 10 5/8" open borehole (477' - 510.5'). Air knifing to
10 -	medium-grained sand; 10% fines; dry; no staining; no unusual odors; (10,80,10) Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/4]; 80% fine to coarse gravel (subangular to angular, <3"				- - - -					20	13:25	
- - 15 -	diameter); 20% medium- to coarse-grained sand; trace fines; no staining; no unusual odors; (80,20,tr)				- - - -		=			25.8	13:47	
20 -	@ 20' - decrease in sand to 10%; color change to dark olive brown [2.5Y 3/3]; (90,10,tr)				- - - -					23.4	14:20	From 0' - 20', rate of drilling is 0.44 ft/min.
25 -	@ 25' - gravel (angular to subangular, 1" to 4" diameter); sand (angular to subangular)				- - - -)=()			28.9	14:25	
	·	RTHING			his borin	ig wa	s oriç	ginall	y ide	entif	ied as	s PW-1A. However, nsistent with naming

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

LOCATION Rialto, CA

NUMBER

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

HA0816

GROUND SURF. NA ft

TOP OF CASING 1704.48 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 2 OF 18

								SAMP	LES	3		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE		RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	GRAVEL with SAND (GW): 1" - 4" diameter gravels; (90,10,tr)				- -					69.2	14:30	PID headspace reading, sample placed in baggie, condensation apparent in baggie.
35 - - -					- - - -							From 20' - 40', rate of drilling is approximately 0.4 ft/min.
40 - - -					- - -					10.2	15:10	
- 45 - - -	Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/4]; 90% fine to coarse gravel (angular to subangular, <4" diameter); 10% coarse- to medium-grained sand; trace fines; dry; no staining; no unusual odors; (90,10,tr)				- - - -		=			86.6	15:20	PID headspace reading, sample placed in baggie, condensation apparent in baggie.
50 - - -					- - - -		=:			90.7	15:27	PID headspace reading, sample placed in baggie, condensation apparent in baggie.
- 55 - - -	@ 55' - angular to subangular gravels and sands				- - - -		=			102	15:32	sample placed in baggie, condensation apparent in baggie.
60 <u>-</u>	RACTOR WDC Exploration & Wells NO		1000	289 14 NOTES: 1	-			nim = !!			- د	Bottom of 16" diameter steel casing is at 59'.

CONTRACTOR WDC Exploration & Wells
EQUIPMENT Peterbilt SpeedStar 30K
DRILL MTHD Air Rotary Casing Hammer
DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

NORTHING 1880289.14 EASTING 6737216.65 COORDINATE SYSTEM:

10 5/8" NAD-83 Zone 5 REVIEWER Walt Grinyer, P.G.

NOTES: This boring was originally identified as PW-1A. However, the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

SHEET 3 OF 18

LOCATION Rialto, CA NGVD-29

system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

——————————————————————————————————————							-	2 A N/1) F			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"		PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL (GW): olive [5Y 4/4]; coarse gravel (angular to subangular, <3" diameter); trace fines; (100,0,tr)				-						16:15	@ approximately 60' - 65', appear to be grinding through a boulder or large cobbles.
- 65 - - -					- - -					12.0	16:22	
70 -	@ 70' - very wet soil cuttings due to water injection in the borehole				- - - -					4.8	16:30	From 60' - 80', rate of drilling is approximately 0.6 ft/min.
- 75 - -					- - -					5.2	16:40	
- 80 - -					- - -					3.1	16:45	
- 85 - - -	@ 85' - decrease in gravel size; angular to subangular gravels				- - - - -					11.7	17:00	@ 85', continue to grind through large cobbles or boulders.
	•	IORTHING ASTING		216.65 the boring IE) has be	en re	vised	to F	PW-1	to b	ое со	s PW-1A. However, nsistent with naming

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

LOCATION Rialto, CA

NUMBER

START DRILL DATE May 21, 04 ELEVATION DATA:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

FINISH DRILL DATE May 28, 04

HA0816

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 4 OF 18

							٩	SAME	I FS			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL (GW): increase in gravel size				- - -					12.2	17:12	
95 - - -					- - -					13.5	17:25	From 80' - 95', rate of drilling is approximate 0.38 ft/min.
100 -	@ 100' - color change to very dark gray [2.5Y 3/1]; very wet soils due to water injection				- - - -					15.0	07:45	All subsequent PID readings are from the hopper.
105 -	@ 105' - trace fines; wet due to water injection in borehole				- - - -)=()			0.9	07:53	Background PID read is 0.9 ppm.
110 -	@ 110' - gravel (angular to subangular, <1" diameter)				- - - -		E			0.9	08:05	
115 -	Well-Graded GRAVEL with SAND (GW-SW): very dark grayish brown [2.5Y 3/2]; 70% well-graded gravel (<0.5" diameter); 30% coarse- to medium-grained sand; trace fines; wet due to water injection in borehole (70,30,tr)				- - - -		<u>;=</u>			1.2	08:10	From 98' -115', rate o drilling is 0.425 ft/min.

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF CASING 1704.48 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 5 OF 18

								SAMI	PLE	s		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with SAND (GW-SW): angular to subangular sands and gravels				- - -					1.2	08:15	
125 -					- - -					1.2	08:20	
130 -	maximum size of gravels is 0.5" diameter				- - -		<u>S</u> =C			1.1	08:24	
135 -	@ 135' - increase in gravel size (<0.75" diameter); angular to subangular				- - - -		=(1.3	08:27	From 115' -135', rate of drilling is approximatel 1.18 ft/min.
140 -	@ 140' - color change to olive brown [2.5Y 4/4]; 70% well-graded gravel (angular to subangular, <0.5" diameter); 20% mediumto coarse-grained sand; 10% fines; moist due to water injection into the borehole; (70,20,10)				- - -		×			0.6	13:30	From 140' - 150', rate drilling is approximatel 0.45 ft/min.
145 -					- - - -					0.0	13:45	
150	RACTOR WDC Exploration & Wells NO	RTHING		289.14 NOTES : T								s PW-1A. However,

EQUIPMENT Peterbilt SpeedStar 30K **DRILL MTHD** Air Rotary Casing Hammer **DIAMETER** 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

EASTING 6737216.65 **COORDINATE SYSTEM:**

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone

the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

SHEET 6 OF 18

NGVD-29

TOP OF CASING 1704.48 ft LOCATION Rialto, CA

system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

	<u></u>							SAME	PLES	<u> </u>		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.		WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE		RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- -	Well-Graded GRAVEL with SAND (GW-SW): angular to subangular sands and gravels				- - -		=			0.4	13:52	PID headspace reading, sample placed in baggie, condensation apparent in baggie.
- 155 - - -	@ 155' - color change to olive [5Y 4/4]				- - - -					4.1	14:13	
160 -	@ 160' - color change to dark olive gray [5\ 3/2]; 80% fine to coarse gravel (<0.75" diameter); 10% coarse-grained sand; 10% fines; no staining; no unusual odor; moist due to water injection into the borehole; (80,10,10)				- - - - -					3.3	14:25	From 150' -160', rate of drilling is approximately 0.22 ft/min.
165 - - - -	GRAVEL with SILTY SAND (GW-SM): dar olive gray [5Y 3/2]; 60% well-graded fine gravel (<0.25" diameter); 20% medium- to coarse-grained sand; 20% fines; moist due to water injection into the borehole; (60,20,20)				- - - -					0.9	15:20	
170 - - -					- - -					0.9	15:30	
175 - - - - 180 -	@ 175' - angular to subangular sands and gravels				- - - - -		<u>`</u> ;≡.			0.9	15:37	
CONT	•	ORTHING		the boring ID) has be	en re	vised	to P	W-1	I to b	ое со	s PW-1A. However, nsistent with naming

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer **DIAMETER** 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORF 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

LOCATION Rialto, CA PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 7 OF 18

NUMBER	HA0816
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								۶	SAMI	PLES			
EPTH ft-bgs)	DES 1) Lithology 2) Color 3) Moisture 4) Grain Size	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
185 -	GRAVEL with SILT increase in gravel s	Y SAND (GW-SM): size (<1.25" diameter)				-						15:45 15:55	From 160' - 180', rate drilling is 0.33 ft/min.
190 -	@ 190' - damp					-					0.8	16:07	
- 195 - - -						-					0.5	16:15	
200 -						-					0.4	16:25	Bottom of 13 3/8" diameter steel casing at 199'.
205 -	@ 205' - color char [2.5Y 3/3]	nge to dark olive brown				-		\			3.4	08:45	PID readings from the air return at hopper.

LOGGER Phuong Ly

NAD-83 Zone

REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

SHEET 8 OF 18

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAME	PLES	s		
DEPTH [ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 215 -	GRAVEL with SILTY SAND (GW-SM): gravel sizes <1.25" diameter				- - - -					3.5	08:48 08:52	Background PID readi is 3.4 ppm.
220 -	@ 220' - 60% well-graded fine gravel (angular and subangular); increase in well-graded medium- to coarse-grained sand to 25%; decrease in fines to 15%; moist due to water injection into the borehole; no staining; no unusual odors; (60,25,15)				- - - -					5.2	09:05	From 205' - 215', rate drilling is approximate 1.0 ft/min.
- 225 - - -					- - -					2.6	09:15	
230 -					- - -					2.3	09:22	
235 -	@ 235' - angular to subangular gravels and sands				- - - -		<u> </u>			2.2	09:30	From 220' - 235', rate drilling is approximate 0.8 ft/min.

LOGGER Phuong Ly

NAD-83 Zone 5 REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

SHEET 9 OF 18

TOP OF CASING 1704.48 ft LOCATION Rialto, CA PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								SAMF) F	$\overline{}$		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	GRAVEL with SILTY SAND (GW-SM): angular to subangular gravels				- - -					2.7	09:50	
245 -					- - -					2.0	09:55	
250 -	@ 250' - gravel sizes <1.25" diameter				- - - -					2.1	09:59	
255 -					- - -					2.0	10:05	From 240' - 255', rate drilling is approximate 1.0 ft/min.
260 -	@ 260' - decrease in gravel sizes (<0.5" diameter)				- - -					2.0	10:18	
265 -					- - - -					1.9	10:24	

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft
TOP OF CASING 1704.48 ft

SHEET 10 OF 18

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

							S	AMI	PLES			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	GRAVEL with SILTY SAND (GW-SM): gravel sizes <0.5" diameter				- - -		<u></u>			1.7	10:30	
275 -					- - - -		=			1.7	10:35	From 260' - 275', rate drilling is approximate 1.0 ft/min.
280 -					- - -		E			1.7	10:48	
285 -	@ 285' - moist due to water injection into the borehole				- - - -]= <u> </u>			1.6	10:53	
290 -					- - - -		=			1.5	10:58	
295 -	@295' - angular to subangular gravels				- - - -					1.5	11:02	From 280' - 295', rate drilling is approximate 1.0 ft/min.
300 -	RACTOR WDC Exploration & Wells NC	ORTHING		289.14 NOTES: T								s PW-1A. However,

CONTRACTOR WDC Exploration & Wells
EQUIPMENT Peterbilt SpeedStar 30K
DRILL MTHD Air Rotary Casing Hammer
DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

NORTHING 1880289.14 EASTING 6737216.65 COORDINATE SYSTEM:

10 5/8" NAD-83 Zone 5 REVIEWER Walt Grinyer, P.G.

NOTES: This boring was originally identified as PW-1A. However, the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft TOP OF CASING 1704.48 ft

LOCATION Rialto, CA PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 11 OF 18

NUMBER HA0816

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	GRAVEL with SILTY SAND (GW-SM): gravel sizes <0.5" diameter (angular to subangular)				-		();=()			_	11:16	
305 -					- - - -					1.5	11:20	
310 -					- - - -					1.5	11:25	
315 -	Well-Graded GRAVEL with SAND (GW-SW): dark olive gray [5Y 3/2]; 50% fine gravel (angular and subangular); 40% well-graded medium- to coarse-grained sand; 10% fines; moist due to water injection; no staining; no unusual odors; (50,40,10)				- - - -					1.6	11:30	
320 -	@ 320' - gravel sizes <0.5" diameter				- - -		<u>>=</u> (1.6	11:39	
325 -					- - - -		<u>`</u> ≒.			1.5	11:42	

LOGGER Phuong Ly

NAD-83 Zone 5

REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

EQUIPMENT Peterbilt SpeedStar 30K

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF

TOP OF CASING 1704.48 ft **DATUM** NGVD-29

SHEET 120F 18

PROJECT 160-Acre Parcel, Rialto, CA **DATUM NUMBER** HA0816

								SAME	LE			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
335 -	Well-Graded GRAVEL with SAND (GW-SW): angular to subangular gravels				-						11:48	
- - -	@ 335' - decrease in gravel sizes (<0.25" diameter)				-					1.5	11:55	From 320' - 335', rate drilling is approximate 1.0 ft/min.
340 -					- - -					1.4	12:10	
345 -					-					1.4	12:14	
350 -	@ 350' - moist due to water injection				-					4.2	12:20	
355 -					-) III			3.6	12:30	From 340' - 355', rate drilling is approximate 1.0 ft/min.
360 CONT		Political Politi										

EASTING 6737216.65

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

this project and proposed in the project work plan.

system for the monitoring wells installed by GeoSyntec Consultants for



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF CASING 1704.48 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 13 OF 18

								SAME	LES			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, et	,	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 365 -	Well-Graded GRAVEL with SAND (GW-SW): increase in well-graded fine gravel to 75% (angular and subangular); decrease in sand to 15%; decrease in finto 10%; no staining; no unusual odors; (75,15,10)	es			- - - -						14:10	From 360' - 375', rate drilling is approximate 0.6 ft/min.
-					- - -					1.4	14:17	
370 -	GRAVEL with SILTY SAND (GW-SM): d olive brown [2.5Y 3/3]; 50% well-graded f gravel (angular and subangular); 35% well-graded medium- to coarse-grained sand; 15% fines; damp due to water injection; (50,35,15)	ark POINT			- - - -		×			1.4	14:25	
375 - - - - - -					- - - -						14:35	@ 377', very difficult drilling; appear to be encountering a cemented zone (approximately 377' - 390').
385 -	Wall Cooked ODAVEL with CAND				- - - -						14:10	
390 -	Well-Graded GRAVEL with SAND (GW-SW): olive brown [2.5Y 4/4]; 80% well-graded gravel (angular and subangular); 15% fine- to coarse-grained sand; 5% fines; damp due to water injection; no staining; no unusual odors; (80,15,5)	() ()			- - - -					1.2	15:23	

LOGGER Phuong Ly

DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF CASING 1704.48 ft

SHEET 140F 18

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								SAME	PLE:	s		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with SAND (GW-SW): angular to subangular gravels				-					1.3	15:30	
395 -	@ 395' - decrease in well-graded fine gravel to 50% (angular to subangular, <0.25" diameter); increase in well-graded fine- to coarse-grained sand to 45%; 5% fines; no staining; no unusual odors; (50,45,5)				-					2.1	15:40	
400 -					- - -					3.0	15:57	
405 -					- - -		S			2.4	16:05	
410 -	@ 410' - damp due to water injection into the borehole				- - -					3.1	16:15	
415 -					- - - -					1.7	16:25	From 400' - 415', rate drilling is approximatel 0.43 ft/min.
420]	RACTOR WDC Exploration & Wells NC	RTHING		289.14 NOTES : T								s PW-1A. However,

EQUIPMENT Peterbilt SpeedStar 30K **DRILL MTHD** Air Rotary Casing Hammer **DIAMETER** 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

EASTING 6737216.65 **COORDINATE SYSTEM:**

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone 5

the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

NUMBER HA0816

TOP OF CASING 1704.48 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 15 OF 18

								SAME	PLES			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with SAND (GW-SW): gravel sizes <0.25" diameter; (50,45,5)				- - -					1.8	16:43	Stopped injecting water into borehole.
425 - - - -	SANDY SILT with GRAVEL (ML): olive brown [2.5Y 4/4]; 15% very fine to fine gravel; 30% well-graded fine- to coarse-grained sand; 55% fines; moist; no plasticity; (15,30,55)	0		Temporary well PW-1A-T01-444	-					1.5	16:50	No subsequent PID readings due to moist soils.
430 -				PW-1A-T01-444 screened from 434' - 444'. Static water level measured at 430.98'.	-						17:00	
435 -					PW- (Groung	1A-T01 water		e)			17:15	From 420' - 435', rate of drilling is approximately 0.33 ft/min.
440 -	@ 440' - saturated			♥ @ 440', encountered first groundwater NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION	- - -					(07:30	From 434' - 444', drilled open hole with 10 5/8" drill bit to install Temporary Well PW-1A-T01-444.
445 - - - - 450 -	SANDY GRAVEL with CLAY (GW-GC): olive brown [2.5Y 4/4]; 60% fine gravel (angular to subangular); 30% medium- to coarse-graded sand; 10% fines (clay lenses); wet; no plasticity; no dilatancy; (60,30,10)			LOG FOR PERMANENT WELL PW-1	-					(08:05	

CONTRACTOR WDC Exploration & Wells **EQUIPMENT** Peterbilt SpeedStar 30K **DRILL MTHD** Air Rotary Casing Hammer **DIAMETER** 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

NORTHING 1880289.14 **EASTING** 6737216.65 **COORDINATE SYSTEM:**

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone

This boring was originally identified as PW-1A. However, the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

SHEET 16 OF 18

TOP OF CASING 1704.48 ft LOCATION Rialto, CA PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								SAME	LES			
EPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	CLAYEY SAND (SC): olive brown [2.5Y 4/3]; trace gravel; 90% well-graded mediu to coarse-grained sand (angular to subangular); 10% fines (clay lenses); wet; no plasticity; no dilatancy; (tr,90,10)				- - -						08:10	
455 - - - -	SANDY CLAY (CL): light olive brown [2.5 5/4]; 10% medium-grained sand (angular subangular); 90% clay; wet; low dilatancy; no plasticity; (0,10,90)	o ////////			- - -						08:20	
460 - - -	@ 460' - increase in sand to 40% (angular to subangular); 60% clay; wet; (0,40,60)				- - - -)H				08:30	
465 - - - -	CLAYEY GRAVEL (GC): light olive brown [2.5Y 5/4]; 60% angular to subangular fine gravel; 10% medium- to coarse-grained sand; 30% clay; low dilatancy; no plasticit wet; (60,10,30)				- - - -		=				08:55	
470 - - - -	@ 470' - gravel sizes <0.25" diameter				- - -						09:00	Borehole producing lots of water.
475 - - - - 480 -	@ 475' - increase in gravel size (<0.35" diameter)				- - - -		H				09:05	@ 477', bottom of 11 3/4" diameter steel casing. From 477' - 510.5', ope hole drilling (10 5/8" diameter)

EQUIPMENT Peterbilt SpeedStar 30K **DRILL MTHD** Air Rotary Casing Hammer **DIAMETER** 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

EASTING 6737216.65 COORDINATE SYSTEM:

NAD-83 Zone 5

REVIEWER Walt Grinyer, P.G.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATIONRialto, CATOP OFPROJECT160-Acre Parcel, Rialto, CA DATUM

TOP OF CASING 1704.48 ft **DATUM** NGVD-29

SHEET 17 OF 18

NUMBER HA0816

	L BORE 12/03					_		_							
	_	DESCRIPTION		(7)				(#)			SAME				
DEPTH (ft-bgs)		5) Content (%) 6) Plasticity 7) Hardness e 8) Other (Staining, 6	etc.)	GRAPHIC LOG	WELL LOG		GROUNDWATER/ STRUCTURE	ELEVATION (f	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -		(EL (GC): increase in granter); interbedded lense: 0,30)						-		<u> </u>				09:10	
485 -	light olive brown subangular fine coarse sand; 30 dilatancy, no pla @ 486.5' - SAN olive brown [2.5 fine-grained sar	/EL with SAND (GC-SW) n [2.5Y 5/4]; 40% angular gravel; 30% medium to 10% clay; moist to wet; low asticity; (40,30,30) DY SILT with CLAY (ML) not y 4/4]; 30% very nd (rounded to subangula ium plasticity; moist; slow	to /): ar);		(Navaaka)				V-1A-T 486 oil Sam	Ш	18-6" 32/10			10:00	From 486' - 487.5', dr soil sample PW-1A-T02-486 collected using a 325- hammer.
490 -							Temporary well PW-1A-T02-510	-							
495 -						•••	screened from 500' - 510'. Static water level measured at 504'.	-							@ 495' - 500', no recovery of cuttings f logging. No water observed from cyclor
500 -								-							
505 -	olive brown [2.5 fine- to medium	AND with SILT (SW-SM): Y 4/4]; 90% well-graded -grained sand (angular to % fines; moist; (0,90,10))				NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-1	- - - PW- (Groun <u>u</u>	1A-T02 dwater		le)			14:30	

CONTRACTOR WDC Exploration & Wells
EQUIPMENT Peterbilt SpeedStar 30K
DRILL MTHD Air Rotary Casing Hammer
DIAMETER 16", 13 3/8", 11 3/4", 10 5/8"

LOGGER Phuong Ly

NORTHING 1880289.14 EASTING 6737216.65 COORDINATE SYSTEM:

10 5/8" NAD-83 Zone 5 **REVIEWER** Walt Grinyer, P.G.

the boring ID has been revised to PW-1 to be consistent with naming system for the monitoring wells installed by GeoSyntec Consultants for this project and proposed in the project work plan.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-1

START DRILL DATE May 21, 04 ELEVATION DATA:

FINISH DRILL DATE May 28, 04

GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF CASING 1704.48 ft NGVD-29

SHEET 180F 18

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with SAND and SILT (GW-SM): olive brown [2.5Y 4/4]; 50% well-graded gravel (angular and subangular, <0.03" diameter); 40% well-graded medium to coarse sand; 10% fines; dry; (50,40,10)				-					ш.	14:40	
515 -	Boring terminated at a depth of 510.5'. Permanent well PW-1 was subsequently installed. Refer to well construction log for permanent well PW-1.				- - -							
520 - -					- - -							
525 - -					- - - -							
530 -					- - - -							
535 -					- - - -							
	•	RTHING STING	3 18802 67372		has be							s PW-1A. However,

LOGGER Phuong Ly

NAD-83 Zone 5 REVIEWER Walt Grinyer, P.G.



GeoSyntec Consultants

200 East Del Mar Boulevard, Suite 250 Pasadena, California 91105

Phone: (626) 449-0664

WELL CONSTRUCTION LOG

BELOW GROUND SURFACE COMPLETION:

Well Box: Flush-Mounted, Traffic-Rated Steel

Protective Covers: Locking Well Caps

Boring ID: PW-2

Start Drill Date: 9 June 2004 Finish Drill Date: 1 July 2004

Location: West Lowell Street Project: 160-Acre Parcel, Rialto, CA

Number: HA0816

Logger: PL Reviewer: KA Page 1 of 1

Elevation Top of Casing: 1639.36 ft MSL

Vert Datum: NGVD-29;

HVC-11 (Elev=1622.84)

Northing: 1878329.50 6738651.87 Easting: Horiz Datum: NAD-83 Zone 5

DRILLING SUMMARY:

Total Boring Depth: 644 ft bgs

Drilling Method: Air Rotary Casing Hammer

Drilling Fluid: Air / Injected Water (Municipal Hydrant)

Contractor: WDC Exploration & Wells Drilling Rig: Peterbilt SpeedStar 30K

Telescoping Drive Casing Diameters: Tricone Drill Bit Diameters: 13 3/8" to 199 ft bgs 12 1/4" to 199 ft bgs 11 3/4" to 595 ft bgs 10 5/8" to 597 ft bgs 8 1/2" to 644 ft bgs 9 5/8" to 642 ft bgs

WELL CONSTRUCTION DETAILS:

Well Construction Dates: 1 through 8 July 2004

MONITORING WELL PW-2:

Total Well Depth: 500 ft bgs

Well Development Date: 16 July 2004

Blank Well Casing: Virgin, factory-sealed, flush-threaded, 4"-diameter, Sch 80 PVC (from ground surface to 455 ft bgs) Well Screen Interval: Virgin, factory-sealed, flush-threaded, 4"-diameter, 0.020" slotted, Sch 80 PVC (from 455 to 495 ft bgs)

Length of End Cap / Sump: 0.41 ft / 4.8 ft

Centralizers (2 total): Metal (directly above & below screen interval)

PIEZOMETER PW-2A:

Total Piezometer Depth: 641.5 ft bgs

Blank Well Casing: Virgin, factory-sealed, flush-threaded, 2"-diameter, Sch 80 PVC (from ground surface to 621.5 ft bgs)

Well Screen Interval: Virgin, factory-sealed, flush-threaded, 2"-diam, 0.020" slotted, Sch 80 PVC (from 621.5 to 641.5 ft bgs)

Length of End Cap: 0.63 ft

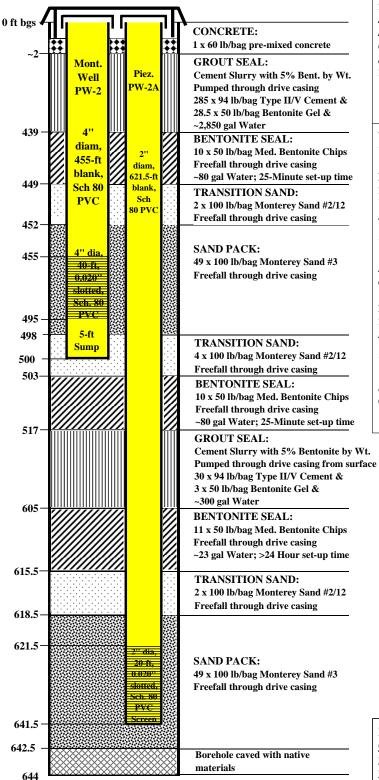
Centralizers (3 total): PVC with metal screws (directly above and below the screen interval and at 580 ft bgs)

TEMPORARY WELLS INSTALLED Well **Temporary** Screen Approx. Static Well Installation Depth Interval Water Level (ft bgs) Date (ft bgs) (ft bgs) PW-2-T01-468 14-Jun-04 468 458 - 468 462.54 PW-2-T02-496 15-Jun-04 491 - 496 462.50 PW-2-T03-520 498.79 16-Jun-04 520 515 - 520 PW-2-T04-587 23-Jun-04 577 - 587 572.22 PW-2-T05-640 29-Jun-04 640 635 - 640 621.49

DRIVE SOIL SAMPLES COLLECTED											
	Sampling Depth	Sample									
Soil Sample ID	(ft bgs)	Date									
PW-2-T03-522.5-GT	522.5	16-Jun-04									
PW-2-552-GT	552	17-Jun-04									
PW-2-T04-589-GT	589	22-Jun-04									
PW-2-TO5-643.5-GT	643.5	12-Jul-04									

NOTES:

On 15 July 2004, it was determined using a downhole camera that piezometer PW-2A was damaged during installation. Thus, the piezometer was not developed and a replacement piezometer (PW-2A) was subsequently installed in October 2004.



WELL DIAGRAM NOT TO SCALE



0 ft bgs

~32

~60

574

615

619

GeoSyntec Consultants

200 East Del Mar Boulevard, Suite 250 Pasadena, California 91105

Phone: (626) 449-0664

WELL CONSTRUCTION LOG

BELOW GROUND SURFACE COMPLETION:

Piez.

PW-2A

4"

diam,

60-ft

blank,

Sch 40 Carbon

Steel

diam.

562-ft

blank, Sch 80

PVC

Well Box: Flush-Mounted, Traffic-Rated Steel

Protective Cover: Locking Well Cap

Boring ID: PW-2A

Start Drill Date: 7 October 2004 Finish Drill Date: 13 October 2004

Location: West Lowell Street

Project: 160-Acre Parcel, Rialto, CA Number: HA0816

Logger: PL Reviewer: KA

CONCRETE / CEMENT

4 x 94 lb/bag Type II/V

GROUT SEAL:

Cement Slurry with 5% Bentonite by Weight

10 x 94 lb/bag Type II/V

~100 gal Water

~10 gal Water

~4,680 gal Water

15-Minute set-up time

California Portland Cement &

2 x 50 lb/bag Medium Bentonite Chips

VOLCLAY GROUT SEAL:

Pumped through drive casing from surface

130 x 50 lb/bag Volclay Grout

1 x 50 lb/bag Bentonite Gel &

BENTONITE SEAL:

Freefall through drive casing

5 x 60 lb/bag pre-mixed concrete

California Portland Cement

Pumped through drive casing from surface

Page 1 of 1

Elevation Top of Casing: 1639.58 ft MSL

Vert Datum: NGVD-29;

HVC-11 (Elev=1622.84)

Northing: 1878329.54 Easting: 6738632.77 Horiz Datum: NAD-83 Zone 5

DRILLING SUMMARY:

Total Boring Depth: 647 ft bgs

Drilling Method: Air Rotary Casing Hammer

Drilling Fluid: Air / Injected Water (Municipal Hydrant)

Contractor: WDC Exploration & Wells
Drilling Rig: Peterbilt SpeedStar 100K

Telescoping Drive Casing Diameters:

11 3/4" to 299 ft bgs 9 5/8" to 643 ft bgs Tricone Drill Bit Diameters: 10 5/8" to 299 ft bgs

8 1/2" to 647 ft bgs

WELL CONSTRUCTION DETAILS FOR REPLACEMENT PIEZOMETER PW-2A:

Total Piezometer Depth: 642 ft bgs

Well Construction Dates: 13 through 16 October 2004

Well Development Date: 26 October 2004

Blank Well Casing: Virgin, flush-threaded, 4"-diam, Sch 40 carbon steel (from ground surface to 60 ft bgs); Virgin, factory-sealed, flush-threaded, 4"-diameter,

Schedule 80 PVC (from 60 to 622 ft bgs)

Well Screen Interval:

Virgin, factory-sealed, flush-threaded, 4"-diameter, 0.020" slotted, Sch 80 PVC (from 622 to 642 ft bgs)

Length of End Cap: 0.40 ft

Centralizers (2 total): Metal (directly above and below

the screen interval)

BENTONITE SEAL:

40 x 50 lb/bag Medium Bentonite Chips Freefall through drive casing

~157 gal Water

30-Minute set-up time

TRANSITION SAND:

2~X~100~lb/bag Monterey Sand #2/12

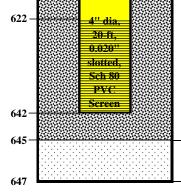
Freefall through drive casing

SAND PACK:

15 x 100 lb/bag Monterey Sand #3 Freefall through drive casing

NOTES:

On 15 July 2004, it was determined using a downhole camera that the original piezometer PW-2A was damaged during installation. Thus, this boring was drilled approximately 20 ft west of the original piezometer PW-2A location and this replacement piezometer (PW-2A) was subsequently installed.



TRANSITION SAND:

2 x 100 lb/bag Monterey Sand #2/12 Freefall through drive casing

WELL DIAGRAM NOT TO SCALE



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 1 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								MA	PLE			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
5 -	ARTIFICIAL FILL Asphalt Surface; 2" thick Well-Graded GRAVEL (GW): olive brown [2.5Y 4/4]; 60% fine to coarse gravel; 20% cobbles (<8" diameter); 20% well-graded				- - - -							Borehole telescoping diameters and approximate depths: 3/8" diameter steel casing (0' - 199'), 11 3/4" diameter steel casing (199' - 587'), 9 5/8" diameter steel casing (587' - 642'), 8 1/2" diameter open borehole (642' - 642.5 Air knifing to 8.2'.
10 -	fine- to coarse-grained sand; trace fines; dry; loose; (20,60,20,tr) @ 10' - becomes damp due to water injection				- - - -		<u> </u>			1	0830	
15 -	Well-Graded GRAVEL (GW): dark olive gray [5Y 3/2]; fine to coarse gravel (angular and subangular, <1.5" diameter); cobbles, trace fines; damp due to water injection; (100,0,tr)				- - - -						0845	
20 -					- - -		S			1	0905	From 20' - 35', rate of drilling is approximate 0.75 ft/min.
25 -					- - - -						0910	
30 -	RACTOR WDC Exploration & Wells NC	RTHING	10702	329.50 NOTES :								



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GS FORM: WELL BORE 12/03

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM **NUMBER** HA0816

NGVD-29

SHEET 2 OF 22

		l l						SAMI	PLES	3		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
	Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/3]; 50% fine to coarse gravel (angular and subangular); 40% well-graded fine- to coarse-grained sand; 10% fines; moist due to water injection; (50,40,10)				-						0915	
35 -	@ 35' - increase in gravel to 60% (<1.75" diameter); decrease in well-graded sand to 35%; 5% fines; (60,35,5)				- - -						0920	
- 40 - - -	@ 42' - very large cobbles/boulders				- - - -						0945	From 40' - 55', rate of drilling is approximately 0.6 ft/min. Difficult drilling due to very large cobbles/boulders.
- 45 - -					- - -						0958	cobbles/boulders.
50 - -					- - -						1005	
55 -	@ 55' - large cobbles/boulders; damp due to water injection				- - - -						1015	
l .	•	RTHING STING		329.50 651.87 NOTES:	_							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

FINISH DRILL DATE Jun 29, 04

ELEVATION DATA: GROUND SURF. NA ft

LOCATION Rialto, CA

TOP OF CASING 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM **NUMBER** HA0816

NGVD-29

SHEET 3 OF 22

								SAME	PLES	3		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"		PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor
	4) Grain Size 8) Other (Staining, etc.)	0			Ш	S		BL	RE	은		3) Air Monitoring
-	Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/3]; 60% fine to coarse gravel (angular and subangular); 35% well-graded fine- to coarse-grained sand; 5% fines; moist due to water injection; (60,35,5)				- -						1038	From 60' -75', rate of drilling is approximately 1.25 ft/min.
- 65 - -					- - -		H				1043	
- 70 - -					- - - -		H				1046	
- 75 - -	@ 75' - gravel sizes <1.75" diameter	00000000000000000000000000000000000000			- - -		TH.				1050	
80 -					- - - -		<u> </u>				1105	
- 85 - -	@ 85' - moist due to water injection				- - - -		H				1115	
		ORTHING ASTING		329.50 651.87 NOTES :	-							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04 **ELEVATION DATA:**

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 4 OF 22

LOCATION Rialto, CA

	L BORE 12/03		1					_	` A B # F) F	_		
	D	ESCRIPTION	U U			£			SAME		S E		
DEPTH (ft-bgs)		5) Content (%) 6) Plasticity 7) Hardness	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitorin
	olive brown [2.5] gravel; 35% wel	RAVEL with SAND (GW): Y 4/3]; 60% fine and coarse I-graded fine- to sand; 5% fines; moist due n; (60,35,5)				-						1120	
95 - - -						-						1130	
100 -						-		<u>>=</u> (1315	
105 -	@ 105' - decrea maximum of 0.2 in fines	se in gravel size to 5" diameter; slight increase				-						1320	
110 -	@ 110' - increas maximum of 1.5	se in gravel size to " diameter				-						1327	
115 - - - -	(SW-GW): olive gravel (angular to well-graded fine	ND with GRAVEL and SILT brown [2.5Y 4/3]; 30% fine to subangular); 60% - to coarse-grained sand; t due to water injection;				-						1332	
120 ⁻	PACTOR WIDO	Exploration & Wells NC	ORTHING	1	NOTES:	1	I	I				1	

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

ELEVATION DATA:

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 5 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAMI	LE			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded SAND with GRAVEL and SILT (SW-GW): slight increase in fines; (30,60,10)				- - -		K				1337	
125 -					- - - -						1340	
130 -	@ 130' - coarse gravel <1.5" diameter				- - - -						1343	
135 -					- - - -						1348	
140 -	@ 140' - moist due to water injection				- - - -						1405	From 140' - 155', rate drilling is approximate 1.33 ft/min.
145 -					- - - -						1410	

COORDINATE SYSTEM:

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NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-2

ELEVATION DATA:

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 6 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAMI	PLE:	s		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
155 -	Well-Graded SAND with GRAVEL and SILT (SW-GW): angular to subangular gravels <1.5" diameter; (30,60,10)				-						1415	
160 -					- - - -						1450	From 160' - 175', rate of drilling is approximately 0.5 ft/min.
165 -	GRAVELLY SAND/SANDY GRAVEL (GW-SW): olive brown [2.5Y 4/3]; 40% fine to coarse gravel (angular to subangular, <1' diameter); 45% well-graded fine- to coarse-grained sand; 15% fines; no staining or unusual odors; (40,45,15)	000			- - - -						1455	
170 -		0000			- - - -						1510	
175 -					- - - -						1520	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

ELEVATION DATA:

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 7 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

							_	SAMI	DI EC	_		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"		PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 185 -	GRAVELLY SAND/SANDY GRAVEL (GW-SW): gravel sizes <1" diameter; (40,45,15)				-						1540	
					- - -						1550	From 185' - 200', rate drilling is approximatel 0.3 ft/min.
190 -					- - - -						1558	
195 -	Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/3]; 80% fine to coarse gravel (angular to subangular, <1.25" diameter); 20% poorly graded coarse-grained sand; 5% fines; wet due to water injection; no staining; no unusual odors; (80,20,5)				-						1615	
200 -					- - -		<u> </u>				1640	@ 199', bottom of 13 3/8" diameter casing. Begin telescoping 11 3/4" steel casing.
205 -	GRAVELLY SAND/SANDY GRAVEL (GW-SW): olive brown [2.5Y 4/4]; 45% gravel (angular to subangular, -1" diameter); 45% well-graded fine- to coarse-grained sand; 10% fines; moist due to water injection; no staining; no unusual odors; (45,45,10)				- - - -						0932	From 205' - 235', rate drilling is approximatel 0.54 ft/min.
210		19,333	1									

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

LOCATION Rialto, CA

NUMBER

START DRILL DATE Jun 3, 04 **ELEVATION DATA:**

FINISH DRILL DATE Jun 29, 04

HA0816

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 8 OF 22

								SAMI	PLE			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)		WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
215 -	GRAVELLY SAND/SANDY GRAVEL (GW-SW): angular to subangular gravels <1" diameter; (45,45,10)				-						0935	
- - -	@ 215' - decrease in gravel sizes to maximum 0.5" diameter (fine gravels)				- - -						0938	
220 -	@ 220' - increase in fine gravel to 65%; 25% poorly graded medium-grained sand; 10% fines; (65,25,10)				- - -						0952	From 220' - 235', rate of drilling is approximately 0.54 ft/min.
225 -	Well-Graded SAND with GRAVEL and SILT (SW-GW): olive brown [2.5Y 4/4]; 35% fine gravel; 55% well-graded coarse- to fine-grained sand; 10% fines; moist due to water injection; (35,55,10)				- - -						0955	
230 -	GRAVELLY SAND/SANDY GRAVEL (GW-SW): olive brown [2.5Y 4/4]; 45% fine gravel; 45% well-graded coarse- to medium-grained sand; 10% fines; moist due to water injection; (45,45,10)				-		<u>\</u>				1000	
235 -	@ 235' - increase in fine to coarse gravel size to maximum 1" diameter				- - - -						1020	
240		lo l	1 1									

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

SHEET 9 OF 22

FINISH DRILL DATE Jun 29, 04 **GROUND SURF.** NA ft **TOP OF CASING** 1639.36 ft LOCATION Rialto, CA

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								SAMI				
EPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	MELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	GRAVELLY SAND/SANDY GRAVEL (GW-SW): angular to subangular gravel; (45,45,10)				- - -		K				1040	From 240' - 255', rate drilling is approximate 0.88 ft/min.
245 -					- - - -						1045	
250 -	Well-Graded SAND with GRAVEL and SILT (SW-GW): olive brown [2.5Y 4/4]; 35% fine gravel (angular to subangular, <0.5" diameter); 55% well-graded fine- to coarse-grained sand; 10% fines; moist due to water injection; (35,55,10)				- - - -)				1050	
255 -					- - -		=(1057	
260 -					- - -						1115	From 260' - 275', rate drilling is approximate 0.65 ft/min.
265 -	@ 265' - increase in fine gravel to 40%; 50% well-graded fine- to coarse-grained sand; 10% fines; (40,50,10)	300000000000000000000000000000000000000			- - - -						1120	
270	RACTOR WDC Exploration & Wells NC	RTHING		329.50 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-2

START DRILL DATE Jun 3, 04 **ELEVATION DATA:**

FINISH DRILL DATE Jun 29, 04

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

LOCATION Rialto, CA PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 10 OF 22

NUMBER HA	٩C	180	16
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									SAMI	PLES			
DEPTH (ft-bgs)	Di 1) Lithology 2) Color 3) Moisture 4) Grain Size	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 275 -		ND with GRAVEL and SILT ar to subangular gravel;				- - - -						1130	
280 -	@ 280' - decreas 65% well-graded sand; 10% fines;	se in fine gravel to 25%; I fine- to coarse-grained (25,65,10)				-						1155	From 280' - 295', rate drilling is approximate 0.75 ft/min.
285 -	SILTY SAND (SI 10% fine gravel (65% well-graded	M): olive brown [2.5Y 4/4]; (angular to subangular); I fine- to coarse-grained no staining; no unusual				-		<u> </u>				1200	
290 -						-						1205	
- 295 - - -						- - -		=				1215	



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

ELEVATION DATA:

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 11 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								AME	PLES	<u>s</u>		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, 6)	(.ote	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE			PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SM): olive brown [2.5Y 4/4]; 15% fine gravel; 60% well-graded coarse- to fine-grained sand 25% fines; moist due to water injection; (15,60,25)				-						1330	
305 -					- - -		`≓Ű				1334	
310 -	@ 310' - increase in gravel size (well-graded fine to coarse gravels)				- - -						1338	
315 -					- - -		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				1343	
320 -	@ 320' - angular to subangular gravel				- - -						1347	
325 -					- - - - -		\				1410	From 325' - 335', rate drilling is approximatel 0.33 ft/min.
	RACTOR WDC Exploration & Wells PMENT Peterbilt SpeedStar 30K	NORTHIN EASTING		329.50 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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REVIEWER Walt Grinyer, P.G.

GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-2

ELEVATION DATA:

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

NGVD-29

SHEET 120F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

LOCATION Rialto, CA

							S	AME				
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND/SANDY SILT (SM-ML): olive brown [2.5Y 4/4]; 5% fine gravel; 55% well-graded fine- to coarse-grained sand; 40% fines; (5,55,40)				- - -						1420	
335 -	Well-Graded GRAVEL with SAND (GW-SW): olive brown [2.5Y 4/4]; 60% well-graded fine to coarse gravel (subangular to angular, <0.75" diameter); 20% medium- to coarse-grained sand; 10% fines; (60,20,10)				- - - -						1430	
340 -	SILTY SAND/SANDY SILT (SM-ML): olive brown [2.5Y 4/4]; 5% fine gravel; 50% well-graded coarse- to medium-grained sand; 45% fines; moist due to water injection; no staining; no unusual odors; (5,50,45)				- - - -		\ <u></u>				1452	From 340' - 355', rate drilling is approximate 0.65 ft/min.
345 -					- - -						1457	
350 -	SILTY SAND (SM): olive brown [2.5Y 4/4]; 5% fine gravel; 60% well-graded coarse- to fine-grained sand; 35% fines; moist due to water injection; (5,60,35)				- - - -						1505	
355 -					- - - -						1515	



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 13 OF 22

								MA				
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND (SM): angular to subangular gravel; (5,60,35)				-						1530	From 360' - 375', rate drilling is approximate 0.83 ft/min.
365 -					- - - -		TH.				1535	@ 365', stopped injecting water into borehole.
370 -	SILTY SAND/SANDY SILT (SM-ML): olive brown [2.5Y 4/4]; 5% fine gravel; 50% well-graded fine- to medium-grained sand; 45% fines; damp due to water injection; (5,50,45)				- - - -						1542	
375 -					- - - -		TH.				1548	
380 -	@ 380' - 20% fine gravel (angular to subangular); 40% well-graded fine- to coarse-grained sand; 40% fines; damp; no staining; no unusual odors; (20,40,40)				- - - -		THE STATE OF THE S				1600	From 380' - 395', rate drilling is approximate 1.0 ft/min.
385 -					- - - -		 				1605	
390 -	RACTOR WDC Exploration & Wells NC	RTHING		329.50 NOTES :	_							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

ELEVATION DATA:

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 140F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DESCRIPTION	00			£	1			1	Ε.		
1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
SILTY SAND/SANDY SILT (SM-ML): angular to subangular gravel; (20,40,40)				- - - -						1610	
SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75)				- - - - -						1646	From 400' - 415', rate drilling is approximate 1.25 ft/min.
				- - - -						1650	
CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]; 5% fine gravel; 55% well-graded fine- to coarse-grained sands; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,55,40)				- - - -		<u> </u>				1655	
@ 415' - increase in coarse-grained sand; (5,55,40)				- - - -						1658 0710	
	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.) SILTY SAND/SANDY SILT (SM-ML): angular to subangular gravel; (20,40,40) SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]; 5% fine gravel; 55% well-graded fine- to coarse-grained sands; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,55,40) @ 415' - increase in coarse-grained sand;	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75)	SANDY SILT with CLAY (ML-CL): dark angular to subangular gravel; (20,40,40) SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]; 5% fine gravel; 55% well-graded fine- to coarse-grained sands; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,55,40)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% innes; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]; 5% fine gravel; 55% well-graded fine-to coarse-grained sand; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,55,40)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10 YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% lines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10 YR 4/6]; 5% fine gravel; 55% well-graded fine-to coarse-grained sand; 75% lines; very moist; medium fines to the stain of th	SANDY SILT with CLAY (ML-CL): dark gellowish brown [10/YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% fines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTV SAND (SC-SM): dark yellowish brown [10/YR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,20,75)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]: 5% fine gravel; 20% poorly graded fine-grained sand; 75% lines; very moist; medium plasticity; no staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10YR 4/6]: 5% fine gravel; 25% wellowish brown [10YR 4/6]: 5% fine gravel; 5% wellowish brown [10YR 4/6]: 5% fine gravel; 5% well-graded fine- to coarse-grained sands; 40% fines; damp; no plasticity; no staining; no unusual odors; (5,55,40)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10'IR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% inters, we would be staining; no unusual odors; (5,20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown [10'IR 4/6]; 5% fine gravel; 20% poorly graded fine-grained sand; 75% inters, very moist, medium plasticity, no staining; no unusual odors; (6,20,75)	SANDY SILT with CLAY (ML-CL): dark yellowish brown (10 YR 4/6); 5% fine gravel; 20,75) CLAYEY SAND/SILTY SAND (SC-SM): dark yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 20 yes yellowish brown (10 YR 4/6); 5% fine gravel; 5% well-graded fine-to coarse-grained sands; 4% fines; damp; no plasticly; no staining; no unusual odors; (5,55,40)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; 20,20,40) CLAYEY SAND/SILTY SAND (SC-SM): lark yellowish brown [10YR 4/6]; 5% fine gravel; and yellowish brown [10YR 4/6]; 5% fine gravel; 3% fines; yellowish brown [10YR 4/6]; 5% fine gravel; 3% fines; yellowish brown [10YR 4/6]; 5% fine gravel; 5% well-graded fine-to gravel; 5% fines; damp; no leasticity; no staining; no unusual odors; (5,55,40)	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 4/6]; 5% fine gravel; (20,40,40) CLAYEY SAND/SILTY SAND (SC-SM): lark yellowish brown [10YR 4/6]; 5% fine gravel; 20,40,40) CLAYEY SAND/SILTY SAND (SC-SM): lark yellowish brown [10YR 4/6]; 5% fine gravel; 20,40,40) CLAYEY SAND/SILTY SAND (SC-SM): lark yellowish brown [10YR 4/6]; 5% fine gravel; 20,40,40,40,40,40,40,40,40,40,40,40,40,40

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 150F 22

							S	SAME	PLES	3		
DEPTH (ft-bgs)	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	CLAYEY SAND/SILTY SAND (SC-SM): damp; (5,55,40)				-		i i				0720	
425 - - - -					- - - -						0723	
430 - - - -	SANDY SILT with CLAY (ML-CL): light olive brown [2.5Y 5/4]; trace fine gravel; 25% well-graded very fine- to coarse-grained sand; 75% fines; damp; medium plasticity (tr,25,75)				- - - -						0727	
435 - - - -	SILTY SAND/SANDY SILT (SM-ML): light olive brown [2.5Y 5/4]; trace fine gravel; 55% well-graded very fine- to coarse-grained sand; 45% fines; lenses of very fine-grained sand and fine gravel; damp; (tr,55,45)				- - - -						0735	From 437' - 470', open borehole drilling with a 10 5/8-inch diameter drill bit beginning at 0750 on 11 June 2004.
440 - - - -	@ 440' - increase in coarse-grained sand; angular to subangular gravel; (tr,55,45)				- - - -		<u></u>				0752	
445 - - - - -	@ 445' - decrease in coarse-grained sand; becomes very moist; (tr,55,45)				- - - -		<u>`</u> =(0754	
450 - CONT	RACTOR WDC Exploration & Wells NO	RTHING	18783	NOTES:	1	ı	ı I			I		1
EQUII	PMENT Peterbilt SpeedStar 30K EA	STING ORDINA	67386	651.87								

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

NGVD-29

SHEET 16 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

									PLES			
EPTH t-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND/SANDY SILT (SM-ML): poorly graded very fine- to medium-grained sand; dry; (tr,55,45)			Temporary well PW-2-T01-468 screened from 458' - 468'. Static water level measured at 462.5'.	- - -						0835	
455 -	@ 455' - increase in medium-grained sand; becomes moist; (tr,55,45)				- - - -		¥				0838	
460 -	@ 460' - well-graded fine- to coarse-grained sand; moist; (tr,55,45)				- - PW- (Ground	2-T01-		e)			0842	
465 - - - -	CLAYEY SAND (SC): dark yellowish brown [10YR 4/6]; 60% poorly graded very fine- to fine-grained sand (angular to subangular); 40% fines; very moist; (tr,60,40)			☑ ② 465', encountered first groundwater NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL	- - - -]≍	,			1026	
470 -	@ 470' - 75% well-graded fine- to medium-grained sand; 25% fines; moist; (tr,75,25)			CONSTRUCTION LOG FOR PERMANENT WELL PW-2	- - -		=				1030	
475 - - - -					- - - -							@ 475', no recovery for logging.
480 -	RACTOR WDC Exploration & Wells NO		1979	329.50 NOTES :				ı				

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.

RIALTOHA0816 04 JH.GPJ GEOSNTEC.GDT 3/24/05

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 170F 22

PROJECT 160-Acre Parcel, Rialto, CA **DATUM** NGVD-29

NUMBER HA0816

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6" WW	RECOVERY (%)	READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor
-	4) Grain Size 8) Other (Staining, etc.) Well-Graded SAND with GRAVEL and SILT (SW-SM): light olive brown [2.5Y 5/4]; 25% fine gravel; 60% fine- to coarse-grained sand; 15% fines; damp; (25,60,15)				-)=C	8	R	PID	1338	3) Air Monitoring
485 -	CLAY with SAND and GRAVEL (CL-SC): olive brown [2.5Y 4/4]; 20% fine gravel; 20% medium- to coarse-grained sand; 60% fines; lenses of very fine-grained sand and fines; very moist; medium plasticity; slow dilatancy; (20,20,60)			Temporary well PW-2-T02-496 screened from 491' - 496'. Static water level measured at	- - - -						1405	
490 -	@ 490' - increase in coarse-grained sand to 30%; decrease in fines to 50%; 20% fine gravel; very moist; (20,30,50)			462.5'.	-		<u></u>				1420	
 - -	CLAYEY GRAVEL (GW-CL): olive brown [2.5Y 4/4]; 60% fine to coarse gravel (angular to subangular, <1" diameter); 10% well-graded medium- to coarse-grained sand; 30% fines, wet; (60,10,30)	00000		@ 492', encountered groundwater	PW (Ground	2-T02- dwater		e)			1600	heaving gravels, no s sample collected.
495 -	@ 495' - color change to light olive brown [2.5Y 5/6]; increase in gravel size to <1.25" diameter			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL	-	_	<u>``</u> >=(`				1615	
- - -	GRAVELLY CLAY (CL-GW): light olive brown [2.5Y 5/6]; 30% fine to coarse gravel; 10% well-graded fine- to coarse-grained sand; 70% fines; wet; (30,10,70)			WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-2	-						1620	
500 -	@ 500' - increase in gravel size to <1" diameter		<u>.</u>		- -		<u>\</u>				0802	
505 -	SANDY CLAY (CL): yellowish brown [10YR 5/6]; 5% fine gravel; 10% well-graded fine-to coarse-grained sand; 85% clay; wet; medium dilatancy; (5,10,85)				- - - -		<u>S</u>				0812	
510 -	RACTOR WDC Exploration & Wells NC	DRTHING	10701	329.50 NOTES :	-							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04 FINISH DRILL DATE Jun 29, 04 **ELEVATION DATA: GROUND SURF.** NA ft **TOP OF CASING** 1639.36 ft

SHEET 180F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								MA	LE			
EPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
	CLAYEY SAND (SC): yellowish brown [10YR 5/6]; 15% fine gravel (angular to subangular, <1" diameter); 70% well-graded medium- to coarse-grained sand; 15% fines; wet; (15,70,15)		• • • • • • • • • • • • • • • • • • • •	Temporary well PW-2-T03-520 screened from 515' - 520'. Static water level measured at 498.79'.	-						0840	
515 - - -	@ 515' - color change to dark yellowish brown [10YR 4/6]; trace fine gravel; 85% poorly graded fine- to medium-grained sand (angular to subangular); 15% fines; wet; (tr,85,15)				PW-	2-T03-		e)			0845	
520 -	@ 520' - color change to light olive brown [2.5Y 5/4]; 10% fine gravel (angular to subangular); 75% well-graded medium- to coarse-grained sand (angular to subangular); 15% fines; iron oxide staining; wet; (10,75,15)			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-2	- PV 5	V-2-TC 22.5-G il Sam)3. T	5- 26- 38				From 521' - 522.5', collected drive soil samples PW-2-522-G & PW-2-T03-522.5 using a 325-lb hamme
525 - - - -	SILTY SAND (SM-ML): light olive brown [2.5YR 5/4]; trace gravel (angular to subangular); 65% sand (30% fine-grained, angular to subangular sand); 35% fines; wet; (tr,65,35)				- - -						0710	
530 -	@ 530' - increase in gravel to <5%				-							
- 535 - - -	@ 535' - little to no gravel; interbedded lenses of clay and sand				-						0820	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04 **ELEVATION DATA:**

GROUND SURF. NA ft

FINISH DRILL DATE Jun 29, 04 LOCATION Rialto, CA

TOP OF CASING 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 190F 22

								AME	LE			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 545 -	SILTY SAND (SM-ML): 70% poorly graded sand (>50% fine-grained, rounded to subangular); 30% fines; (0,70,30) SILT (ML): yellowish brown [10YR 5/6]; 5% sand; 95% fines; (0,5,95)				- - - -							
- - 550 - -	@ 550' - increase in silt; (0,tr,100)				- - - - PW	-2-552 il Sam	<u> </u>					@ 522', free water in
- 555 - - -	SILTY SAND with GRAVEL (SM): yellowish brown [10 YR 5/4]; 15% fine gravel; 70% well-graded fine- to coarse-grained sand; 15% fines; medium dilatancy; wet; (15,70,15)				- - -	ii Saiii	P				1357	From 557' - 567', rate drilling is approximate 0.11 ft/min.
560 -	SANDY CLAY with GRAVEL (CL-SC): dark yellowish brown [10YR 4/4]; 10% fine gravel, 35% well-graded medium- to coarse-grained sands (angular and subangular); 55% fines; medium dilatancy; wet due to water injection into borehole; (10,35,55)				- - - -		Sec				1420	@ 562', injecting wate into borehole.
565 -					- - - -		<u>S</u>				1515	
570 CONT	RACTOR WDC Exploration & Wells NO	RTHING	3 18783	329.50 NOTES :	_							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04

LOCATION Rialto, CA

TO

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

NGVD-29

SHEET 20 OF 22

PROJECT 160-Acre Parcel, Rialto, CA **DATUM**

NUMBER HA0816

							S	SAME	PLES	3		
DEPTH ft-bgs)	,	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SANDY CLAY with GRAVEL (CL-SC): wet; (10,35,55)			Temporary well PW-2-T04-587 screened from 577' - 587'. Static water level measured at 572.22'.	- - -						1530 0925	@ 570', borehole producing abundant water.
575 -	SANDY SILT with CLAY (ML): yellowish brown [10YR 4/6]; trace fine gravel; 15% poorly graded medium- to coarse-grained sand; 85% fines; dry lense; (tr,15,85) @ 576' - wet @ 577' - sand grain size decreases to poorly graded medium- to fine-grained sand	. 1111162 (1.3)			- - - -						0935 0955	From 575' - 576', borehole not producir water (dry lens).
580 -	@ 580' - color change to olive brown [2.5YR 4/4]; 5% fine gravel; 25% well graded medium- to coarse-grained sand; 70% fines; wet; (5,25,70)			@ 580', encountered groundwater	- PW- (Ground	2-T04- water		e)			1020	@ 580', borehole producing abundant water.
585 -	CLAYEY SAND/SILTY SAND (SC-SM): olive brown [2.5YR 4/6]; 5% fine gravel; 55% poorly graded fine- to medium-grained sand; 40% fines; wet; (5,55,40)			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-2		V-2-T0	НИ	21- 37-	100		1030	@ 587', bottom of 11 3/4" diameter steel di casing. Begin telescoping 9 5/8"
590 -	@ 590' - increase in grain size to well-graded medium- to coarse-grained sand; (5,55,40) @ 591' - SILTY SAND (SM): olive brown [2.5YR 4/4]; trace gravel; 80% well-graded fine- to coarse-grained sand; 20% fines; wet; (tr,80,20)				- (Sc	il Sam		56			1035 0810	diameter steel drive casing. From 588' - 589.5', dr soil sample PW-2-T04-589-GT collected using a 325 hammer. @ 590', borehole producing less water. From 591' - 594', borehole producing abundant water.
595 -	CLAYEY SAND/SILTY SAND (SC-SM): olive brown [2.5Y 4/4]; 0% gravel; 60% well-graded fine- to medium-grained sand; 40% fines; dry				- - - -						0825	
	RACTOR WDC Exploration & Wells NC	RTHING	1	829.50 NOTES :	<u> </u>							

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04

ELEVATION DATA:

FINISH DRILL DATE Jun 29, 04

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

SHEET 21 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAMI	PLE			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (#)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitorin
-	Well-Graded SAND with SILT (SW): olive brown [2.5Y 4/4]; 0% gravel; 90% well-graded fine- to medium-grained sand (angular to subrounded); 10% fines; moist; (0,90,10)				- - -						0955	
- 605 - - -	Well-Graded SAND with GRAVEL and SILT (SW-GW): olive brown [2.5Y 4/4]; 25% fine to coarse gravel (subangular, <0.75" diameter); 65% well-graded fine- to coarse-grained sand (angular to subrounded); 10% fines; moist; (25,65,10)				- - - -						1010	
610 -	@ 610' - damp to moist				- - - -						1020	
615 -	@ 615' - gravel diameter increases to <1.0"				- - - -						1030	
620 -					- - - -		<u>```</u>				1047	
- 625 - - -	@ 625' - increasing gravels		0,0		- - - - -		=				1100	
630		0										

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

LOGGER Phuong Ly

DIAMETER 13 3/8", 11 3/4", 10 5/8", 8.5"

BOREHOLE LOG

BORING PW-2

START DRILL DATE Jun 3, 04 **ELEVATION DATA:**

FINISH DRILL DATE Jun 29, 04

HA0816

LOCATION Rialto, CA

NUMBER

GROUND SURF. NA ft **TOP OF CASING** 1639.36 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 220F 22

							- 5	SAMI	PLE	s		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 635 -	Well-Graded SAND with GRAVEL and SILT (SW-GW): 40% well-graded fine to coarse gravel; 50% well graded medium- to coarse-grained sand; 10% fines; wet; (40,50,10) @ 635' - 25% fine to coarse gravel, 65% well-graded fine- to coarse-grained sand; 10% fines; moist; (25,65,10) @ 637' - trace clay			@ 630' encountered groundwater Temporary well PW-2-T05-640 screened from 635' - 640'. Static water level measured at 621.49'.	- - - -						1110 1117	producing abundant water.
640 -	© COT - Hace day			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-2	(Ground	2-T05-6 dwater \$ W-2-T05 643.5 iil Samp	640 Sample	17- 12- 26	66		1120	From 642' - 643.5', drive soil sample PW-2-T05-643.5 collected using a 325-lb hammer.
645 -	Boring terminated at a depth of 644'. Borehole caved up to 642.5'. Permanent well PW-2 was subsequently installed. Refer to well construction diagram for permanent well PW-2.				- - - - -							@ 642', bottom of 9 5/8" diameter steel drive casing. Open borehole diameter 8.5" from 642' to total depth.
655 -					- - - - -							
	•	RTHING		329.50 651.87 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



0 ft bgs

~45

~50

56

440

603

606

626

629

GeoSyntec Consultants

200 East Del Mar Boulevard, Suite 250

CONCRETE:

GROUT SEAL:

~350 gal Water

~2,850 gal Water

BENTONITE SEAL:

1 x 60 lb/bag pre-mixed concrete

Cement Slurry with 5% Bent. by Wt. Pumped through drive casing

6 x 50 lb/bag Medium Bentonite Chips

35 x 94 lb/bag Type II/V Cement &

3.5 x 50 lb/bag Bentonite Gel &

VOLCLAY GROUT SEAL:

77 x 50 lb/bag Volclay Grout

Pumped through drive casing

Pasadena, California 91105 Phone: (626) 449-0664

WELL CONSTRUCTION LOG

Piez.

PW-3A

2"

diam,

606-ft.

Sch 40

Carbon

Steel

BELOW GROUND SURFACE COMPLETION:

Well Box: Flush-Mounted, Traffic-Rated Steel

Protective Covers: Locking Well Caps

Mont.

Well

PW-3

4"

diam.

56-ft,

Sch 40

Carbon

Steel

4"

Boring ID: PW-3

Start Drill Date: 9 July 2004 Finish Drill Date: 26 July 2004

Location: North Locust Avenue

160-Acre Parcel, Rialto, CA Project:

Number: HA0816 Logger: PL Reviewer: KA

Page 1 of 1

Elevation Top of Casings: 1611.81 ft MSL

Vert Datum: NGVD-29;

HVC-11 (Elev=1622.84)

Northing: 1877913.40 Easting: 6740260.99 Horiz Datum: NAD-83 Zone 5

DRILLING SUMMARY:

Total Boring Depth: 629 ft bgs

Drilling Method: Air Rotary Casing Hammer

Drilling Fluid: Air / Injected Water (Municipal Hydrant)

Contractor: WDC Exploration & Wells Drilling Rig: Peterbilt SpeedStar 30K

Tricone Drill Bit Diameters: Telescoping Drive Casing Diameters:

13 3/8" to 199 ft bgs 12 1/4" to 199 ft bgs 11 3/4" to 500 ft bgs 10 5/8" to 500 ft bgs 9 5/8" to 627 ft bgs 8 1/2" to 629 ft bgs

WELL CONSTRUCTION DETAILS:

Well Construction Dates: 26 July through 2 August 2004

MONITORING WELL PW-3:

Total Well Depth: 501 ft bgs

Well Development Date: 5 and 6 August 2004

Blank Well Casing: Virgin, flush-threaded, 4"-diameter, Schedule 40 carbon steel (from ground surface to 56 ft bgs);

Virgin, factory-sealed, flush-threaded, 4"-diameter,

Schedule 80 PVC (from 56 to 456 ft bgs)

Well Screen Interval: Virgin, factory-sealed, flush-threaded, 4"-diam, 0.020" slotted, Sch 80 PVC (from 456 to 496 ft bgs)

Length of End Cap / Sump: 0.40 ft / 4.81 ft

Centralizers (3 total): Metal (directly above and below the screen

interval and at 416 ft bgs)

PIEZOMETER PW-3A:

Total Piezometer Depth: 626 ft bgs

Blank Well Casing: Virgin, flush-threaded, 2"-diameter, Sch 40 carbon steel (from ground surface to 606 ft bgs)

Well Screen Interval: Virgin, 2"-diameter, stainless steel wire wrap with 0.020" slots (from 606 to 626 ft bgs)

Length of End Cap: 0.23 ft

Centralizers (2 total): PVC with metal screws (above and below

the screen interval)

diam, BENTONITE SEAL: 400-ft 12 x 50 lb/bag Medium Bentonite Chips Freefall through drive casing blank, ~48 gal Water; 60-Minute set-up time Sch 80 450 PVC TRANSITION SAND: 3 x 100 lb/bag Monterey Sand #2/16 453 4" dia. 456 SAND PACK: 37 x 100 lb/bag Monterey Sand #3 0.020 Freefall through drive casing slotted Sch 80 496 TRANSITION SAND: 4 x 100 lb/bag Monterey Sand #2/16 5-ft 499 BENTONITE SEAL: Sump 3 x 50 lb/bag Medium Bentonite Chips 501 No water added due to existing grdwtr 501.75 Borehole caved with native materials 509 BENTONITE SEAL: 20 x 50 lb/bag Medium Bentonite Chips No water added due to existing grdwtr **GROUT SEAL:** Cement Slurry with 5% Bent. by Weight Pumped through drive casing from surface 20 x 94 lb/bag Type II/V Cement & 2 x 50 lb/bag Bentonite Gel & ~200 gal Water 588 BENTONITE SEAL: 12 x 50 lb/bag Medium Bentonite Chips ~80 gallons; 30-minute set-up time TRANSITION SAND: 2 x 100 lb/bag Monterey Sand #2/16 2" dia,

20-ft,

0.020'

slotted

S.S. Wire Wrap

WELL DIAGRAM NOT TO SCALE

SAND PACK:

19 x 100 lb/bag Monterey Sand #3

Freefall through drive casing

TEMPORARY WELLS INSTALLED **Temporary** Well Approx. Static Screen Well Installation Depth Interval Water Level IDDate (ft bgs) (ft bgs) (ft bgs) PW-3-TO1-466 450.71 13-Jul-04 461 - 466 466 PW-3-TO2-505 14-Jul-04 505 500 - 505 458.00 PW-3-TO3-545 16-Jul-04 545 540 - 545 512.50 PW-3-TO4-585 20-Jul-04 585 580 - 585 564.65 PW-3-TO5-615 22-Jul-04 615 610 - 615 590.95

DRIVE SOIL SAMPLES COLLECTED										
	Sampling Depth	Sample								
Soil Sample ID	(ft bgs)	Date								
PW-3-TO1-468.5-GT	468.5	13-Jul-04								
PW-3-T03-548-GT	548	15-Jul-04								

NOTES:

On 6 August 2004, it was discovered that piezometer PW-3A was damaged during installation and filter pack sand was inside the piezometer at a top depth of 606 ft bgs. Thus, the piezometer was not developed and was repaired in January 2005.



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

LOCATION Rialto, CA

START DRILL DATE Jul 8, 04

FINISH DRILL DATE Jul 26, 04

ELEVATION DATA: GROUND SURF. NA ft

TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 1 OF 22

								SAMI	PLES	<u>s</u>		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
5 -	ARTIFICIAL FILL Asphalt Surface; 2.5" thick SANDY GRAVEL (GW): olive brown [2.5Y 4/4]; 50% well-graded fine to coarse gravel; 20% cobbles (up to 8" diameter); 30% well graded fine- to coarse-grained sand; trace fines; dry; medium dense; (70,30,tr)	50°5° 05°5°			- - - -						0845	Borehole telescoping diameters and approximate depths: 1 3/8" diameter steel casing (0' - 199'), 11 3/4" diameter steel casing (199' - 500') 9 5/8" diameter steel casing (500' - 627'), 8.5 diameter open borehole to (627' - 629'). Air knifing from 0' - 8'. Grab sample collected every 5' unless otherwise noted.
10 -	@ 10' - becomes moist due to water injection; gravel sizes <1.5" diameter (angular to subrounded)				- - - -		<u></u>				1035	From 0' - 17', rate of drilling is approximately 0.49 ft/min. Water injection into borehole.
15 -	SANDY GRAVEL/GRAVELLY SAND (GW): olive brown [2.5Y 4/3]; 40% fine to coarse gravel; 50% well-graded fine- to coarse-grained sand; 10% fines; (40,50,10)				- - - -						1100	large cobbles/boulders From 17' - 37', rate of drilling is approximatel
20 -	@ 20' - very large cobbles/boulders				- - -						1122	1.33 ft/min.
25 -					- - - - -		<u> </u>				1125	
30 J	RACTOR WDC Exploration & Wells NO	ORTHING	10770	013.40 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM N NUMBER HA0816

NGVD-29

SHEET 2 OF 22

								SAMI	PLES	3		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.		MELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
35 -	SANDY GRAVEL/GRAVELLY SAND (GW) cobble fragments; (40,50,10)				- - - -						1127	
40 -					- - - -						1147	From 37' - 57', rate of drilling is approximate 1.0 ft/min.
45 -	@ 45' - moist due to water injection				- - - -		<u></u>				1150	
50 -					- - - -						1155	
55 -	@ 55' - slight increase in gravels; (45,45,10)				- - - -		<u></u>				1200	From 57' - 77', rate of drilling is approximate 0.51 ft/min.
60 _		0,0										

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 3 OF 22

								SAMI	PLES	3		
DEPTH (ft-bgs)	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"		PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
65 -	SANDY GRAVEL/GRAVELLY SAND (GW): very large cobbles/boulders; (45,45,10) @ 65' - very large cobbles/boulders	20000000000000000000000000000000000000			- - - -						1325	
- 70 - -		00000000000000000000000000000000000000			- - - -		=				1340	
- 75 - - -					- - - -		=				1349	From 77' - 97', rate of drilling is approximately 0.57 ft/min.
- 80 - - -	@ 80' - angular and subangular gravel <1" diameter				- - -		<u>``</u> ;≡ <u>`</u>				1420	0.37 1011111.
85 - - - -	@ 87' - very large cobbles/boulders				- - - -						1430 1435	
EQUIF	PMENT Peterbilt SpeedStar 30K EA	ORTHING ASTING	67402	260.99	I	I			<u> </u>	1		1

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04 FINISH DRILL DATE Jul 26, 04

ELEVATION DATA:

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 4 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH (ft-bgs)	DES 1) Lithology 2) Color 3) Moisture 4) Grain Size	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	(GW-SM): olive broto coarse gravel (ar <1.5" diameter); 25 coarse-grained san	/EL with SILTY SANDY own [2.5Y 4/3]; 50% fine ngular to subangular, % well-graded fine- to d; 15% fines; moist due arge cobbles/boulders;				-						1440	
95 -						- - -						1445	From 97' - 117', rate of drilling is approximatel 1.5 ft/min.
100 -	olive brown [2.5Y 4 to coarse gravel (and diameter); 45% fine sand (angular to su	GRAVEL (SM-GW): /3]; 35% well-graded fine ngular to subangular, <1" b- to medium-grained libangular); 20% fines, injection; (35,45,20)				- - - -						1505	
105 -	@ 105' - sand becomedium-grained sa	omes well-graded fine- to ind; (35,45,20)				- - -						1507	
110 -						- - - -		<u>`</u>				1511	
115 -						- - -						1516	From 117' - 127', rate
120 -	RACTOR WDC E	ynloration & Welle No	PRTHING	18779	013.40 NOTES :	-							drilling is approximatel 1.33 ft/min.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GS FORM:

GEOSYNTEC CONSULTANTS

200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04 FINISH DRILL DATE Jul 26, 04 **ELEVATION DATA:**

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 5 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								MA	PLES	3		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with SILTY SANDY (GW-SM): olive brown [2.5YR 4/3]; 60% well-graded fine to coarse gravel (angular to subrounded, <1.25" diameter); 20% medium- to coarse-grained sand; 20% fines; moist due to water injection; no unusual odors or stains; (60,20,20)				- - -						1535	
125 -					- - -						1538	From 127' - 157', rate drilling is approximatel 1.67 ft/min.
130 -					- - - -						1541	
135 -					- - -		<u>\</u>				1545	
140 -	Well-Graded GRAVEL with CLAY and SAND (GW-SC): olive brown [2.5Y 4/4]; 45% well-graded fine and coarse gravel; 25% well-graded fine- to coarse-grained sand; 30% fines; wet due to water injection; no unusual odors; (45,25,30)				- - - -						1615	@ 140', continue injecting water into the borehole to remove cuttings.
145 -					- - - -		=:				1617	
150												

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA: GROUND SURF. NA ft

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

TOP OF CASING 1611.81 ft

SHEET 6 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

	DESCRIPTION	၂ ဗ	, ,		(£			BAMF		md (md		
DEPTH ft-bgs)	1) Lithology 5) Content (%)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	Well-Graded GRAVEL with CLAY and SAND (GW-SC): slight increase in gravel; (45,25,30)				- - -						1620	
155 -					- - -						1622	
160 -					- - - -						1628	@ 160', continue injecting water into th borehole to remove s cuttings.
165 -	@ 165' - wet due to water injection				- - -		=				0712	
170 -					- - -						0715	
175 -	@ 175' - well-graded fine to coarse gravel; (45,25,30)				- - - -		<u>`</u> =(0721	
180 -	RACTOR WDC Exploration & Wells NC	RTHING		913.40 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM **NUMBER** HA0816

NGVD-29

SHEET 7 OF 22

								SAMI				
DEPTH (ft-bgs)	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"		PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded GRAVEL with CLAY and SAND (GW-SC): moist due to water injection; (45,25,30)				- - -) II				0730	
185 -	@ 185' - large cobbles/boulders				- - - -						0740	From 185' - 199', difficult drilling due to large cobbles/boulders.
190 - - - -					- - - -						0750	
195 - - - -	@ 195' - cobble fragments				- - - -						0803	
200 -					- - -						1021	@ 199', bottom of 13 3/8" diameter steel drive casing. Begin telescoping 11 3/8" diameter steel drive casing.
205 -	Well-Graded GRAVEL with CLAYEY SAND (GW-SC): light olive brown [2.5Y 5/4]; 30% fine gravel; 50% well-graded fine- to coarse-grained sand (angular to subangular); 20% fines; moist due to water injection; no unusual odors; (30,50,20)				- - - -						1025	
	RACTOR WDC Exploration & Wells NO	RTHING							· I			
EQUII	PMENT Peterbilt SpeedStar 30K EA	STING	67402	260.99								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 8 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

							5	SAME	PLES	S		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (#)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND (SM): olive brown [2.5Y 4/4]; 70% well-graded very fine- to coarse-grained sand (angular to subangular); 30% fines; damp due to water injection; no unusual odors (tr,70,30)				- - -						1039	
215 -					- - - -		×				1047	
220 -					- - - -		<u> </u>				1057	
225 -	@ 225' - decrease in fine-grained sand; (tr,70,30)				- - - -						1101	
230 -					- - -						1104	
- - -	@ 232' - increase in fine gravel to 20%; (20,50,30)				- - -							From 232' - 245', diffic drilling due to large cobbles/boulders.
235 -	SILTY SAND with GRAVEL (SM-GW): olive brown [2.5Y 4/4]; 25% fine to coarse gravel (<0.5" diameter); 45% well-graded very fine- to coarse-grained sand; 30% fines; damp due to water infection; (25,45,30)				- - - -						1110	



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

LOCATION Rialto, CA

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816 NGVD-29

SHEET 9 OF 22

								MA				
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SM-GW): increase in gravel to 35%; decrease in gravel size (<0.25" diameter); (35,35,30)				- - -						1131	From 240' - 255', rate of drilling is approximately 1.7 ft/min.
245 -					- - - -						1132	
250 -	@ 250' - color change to dark yellowish brown [10YR 4/6]; decrease in gravel to 25%; increase in very fine-grained sand; (25,45,30)				- - - -						1136	
255 -	@ 255' - slightly plastic fines; gravel (subangular to angular); (25,45,30)				- - - -		<u>`</u> =(1140	From 255' - 259', diffic drilling due to large cobbles/boulders. From 257' - 277', rate drilling is approximate 1.18 ft/min.
260 -	SILTY SAND (SM): light olive brown [2.5Y 5/4]; trace fine gravel; 85% well-graded very fine- to coarse-grained sand (angular to subrounded); 15% fines; dry; no unusual odors; (tr,85,15)	200			- - - -		<u></u>				1300	
265 -					- - - -		=				1302	
270		門根										

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

GROUND SURF. NA ft

SHEET 10 OF 22

ELEVATION DATA: FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND (SM): angular to subrounded sand; (tr,85,15)				_];=[1305	
=	@ 272' - sand becomes poorly-graded; (0,85,15)				_		<u>)=(</u>					
_					_							From 273' - 275', diffic drilling due to large cobbles/boulders.
275 -	@ 276' - sand becomes well-graded;				-						1310	
-	(0,85,15)				-		_,3					From 277' - 297', rate drilling is approximatel 1.18 ft/min.
280 -					_		<u>)=(</u>				1342	
-					-							
-					-							
285 -					_		<u></u>				1345	
-					-							
-					-							
290 -	@ 290' - increase in coarse-grained sand; (0,85,15)				-]=(1348	
-	(6,55), (6)				-							
-					-							
295 -	@ 295' - increase in graves to 10%; (10,80,10)				_						1352	
-					-							From 297' - 317', rate
 -	Poorly Graded SAND (SP): light olive brown [2.5Y 5/4]; 95% very fine- to fine-grained sand; 5% fines; dry; (0,95,5)				-		<u>}</u> =(1405	drilling is approximatel 1.05 ft/min.
300	RACTOR WDC Exploration & Wells NC											

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 **GROUND SURF.** NA ft TOP OF CASING 1611.81 ft LOCATION Rialto, CA

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 11 OF 22

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
	Poorly Graded SAND (SP): very fine- to fine-grained sand; (0,95,5) Well-Graded SAND (SW): light olive brown [2.5Y 5/4]; 95% fine- to medium-grained sand; 5% fines; dry; (0,95,5)	1			-							
305 -					- - -						1411	
310 -					- - - -						1414	
315 -	CILTY CAND (CM). Esha slive beaver to EV				- - - -						1420	From 2471 2071 rate o
320 -	SILTY SAND (SM): light olive brown [2.5Y 5/4]; 70% poorly graded very fine-grained sand; 30% fines; damp due to water injection; (0,70,30)				- - - -		Ħ				1437	From 317' - 337', rate or drilling is approximately 0.8 ft/min.
325 -	SILTY SAND (SM): olive brown [2.5Y 4/4]; 80% well-graded fine- to medium-grained sand; 20% fines; damp due to water injection; (0,80,20)				- - - - -		H				1443	

NAD-83 Zone \$

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REVIEWER Walt Grinyer, P.G.

GS FORM:

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA: FINISH DRILL DATE Jul 26, 04

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 120F 22

LOCATION Rialto, CA

		DOKETIOLE LOG NOWIBE							SAME	DI E	-		
DEPTH (ft-bgs)	D 1) Lithology 2) Color 3) Moisture 4) Grain Size	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitorin
	light olive brown coarse gravel (st <0.75" diameter) coarse-grained st to water injection @ 332' - SILTY [2.5Y 5/4]; trace	with GRAVEL (SW-GC): [2.5Y 5/4]; 35% fine to ubangular to subrounded,); 35% medium- to sand; 30% fines; damp due ;; (35,35,30) SAND (SM): olive brown fine gravel; 65% - to coarse-grained sand;	000			-						1450 1453	
335 -	35% fines; damp	o; (tr,65,35)				-						1458	
 - -	olive brown [2.5)	NDY SILT (SM-ML): light Y 5/4]; 50% poorly graded d sand; 50 % fines; damp;				-						1510	
340 -						-						1513	
345 -	@ 345' - increas sand; (0,55,45)	e in sand grain size to fine				- - -						1516	
350 -	@ 350' - increas graded fine- to n	e in sand grain size to well nedium-grained; (0,55,45)				-						1520	
355 -	@ 355' - 60% po fine-grained san water injection; (porly graded very fine- to d; 40% fines; damp due to (0,60,40)				-		<u>`</u> =(1528	From 355' - 357', rate drilling is approximate 1.11 ft/min. From 357' - 377', rate drilling is approximate 1.33 ft/min.
		•	RTHING STING	 18779	913.40 NOTES :								



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

NGVD-29

SHEET 13 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

								SAMI	91 F.	<u> </u>		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND/SANDY SILT (SM-ML): subangular to subrounded sand; (0,60,40)				-						1550	
	@ 365' - color change to yellowish brown [10YR 5/6]; increase in sand grain size to well-graded very fine- to medium-grained sand; (0,60,40)				- - -						1554	
370 -	@ 370' - color change to dark yellowish brown [10YR 4/6]				- - -						1557	
	SILTY SAND (SM): light olive brown [2.5Y 5/4]; 70% well-graded fine- to medium-grained sand; 30% fines; damp due to water injection; (0,70,30)				- - - -						1600	From 377' - 397', rate o drilling is approximately 1.11 ft/min.
380 -					- - -		=				1614	
385 -	@ 385' - trace coarse-grained sand				- - - -						1616	

NAD-83 Zone \$

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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

LOCATION Rialto, CA

START DRILL DATE Jul 8, 04

ELEVATION DATA:

FINISH DRILL DATE Jul 26, 04

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM **NUMBER** HA0816

NGVD-29

SHEET 140F 22

									MA	PLE	S		
DEPTH (ft-bgs)	1) Lithology 2) Color 3) Moisture 4) Grain Size	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitorin
- - 395 - -	to coarse-graine (0,70,30)	M): 70% well-graded fine- ed sand; 30% fines; hanges to olive brown [2.5Y				- - - - -						1619	@ 397', terminated water injection into borehole.
400 -	@ 400' - damp @ 401' to 403' - fine-grained san	poorly graded very fine- to ad; (0,70,30)				- - -						1643	borenoie.
405 -	@ 405' - 70% w coarse-grained : (0,70,30)	rell-graded fine- to sand; 30% fines; damp;				- - -						1646	
410 -	@ 410' - 70% po medium-grained (0,70,30)	oorly graded fine- to d sand; 30% fines; damp;				- - -		<u>>=</u> (1649	
415 -						- - -						1652	From 417' - 427', ope
420						-							borehole drilling; no water in open boreho

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



GS FORM:

WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

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BORING PW-3

7-3 SHEET 15 OF 22 3, 04 ELEVATION DATA:

START DRILL DATE Jul 8, 04
FINISH DRILL DATE Jul 26, 04
LOCATION Rialto, CA

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA **DATUM** NGVD-29

NUMBER HA0816

	DESCRIPTION	U U			Œ					Ξl		
DEPTH (ft-bgs)	1) Lithology 5) Content (%)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (#)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	CLAYEY SAND (SC): light olive brown [2.5Y 5/4]; 70% poorly graded fine-grained sand (angular to subangular grains); 30% fines; moist; no plasticity; (0,70,30)				-						1702	
425 -	SILTY SAND (SM): light olive brown [2.5Y 5/4]; 70% well graded fine- to medium-grained sand (angular to subangular); 30% fines; damp; (0,70,30)				- - -		=:				1706	@ 427', no free water observed.
430 -	@ 430' - color change to olive brown [2.5Y 4/4]; poorly graded fine-grained sand (angular to subangular); 30% fines; damp; (0,70,30)				- - - -		<u>`</u> =				0826	
435 - - - -	@ 435' - color change to light olive brown [2.5Y 5/4]; 5% fine gravel (angular to subangular, <0.2" diameter); 65% well-graded fine- to coarse-grained sand; 30% fines; dry; no unusual odors; (5,65,30)				- - -		S			2.7	0839	From 437' - 447', rate drilling is approximate 1.25 ft/min.
440 -	@ 440' - color change to olive brown [2.5Y 4/4]; no gravel; decrease in fines to 15%; 85% well-graded fine- to coarse-grained sand; dry; (0,85,15)				- - -		<u>`</u>				0932	
445 -					- - -		<u>`</u> =(3.4	0934	From 447' - 457', rate drilling is approximate
450 -					_							1.17 ft/min.
	•	RTHING	3 1877S	013.40 NOTES :	- - -							drilling is approxin

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM: WELL BORE 12/03

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04 **FINISH DRILL DATE** Jul 26, 04 ELEVATION DATA: GROUND SURF.

GROUND SURF. NA ft
TOP OF CASING 1611.81 ft

SHEET 16 OF 22

NGVD-29

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

LOCATION Rialto, CA

	L BORE 12/03										
		(D					S	AMP		-	
EPTH t-bgs)	·,(,c,	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	ТУРЕ	BLOWS PER 6"	RECOVERY (%)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
	SILTY SAND (SM): damp; (0,85,15)]≓[0948	
455 -	@ 455' - 5% fine gravel (angular to subangular, <0.2" diameter); (5,80,15)				-	-]=			0955	
	@ 457' - decrease in gravel to trace; 85% well-graded fine- to coarse-grained sand; :15% fines; damp; (tr,85,15). @ 458' - Well-Graded GRAVEL with SILT (GW): olive brown [2.5Y 4/4]; 80% well-graded gravel (angular to subangular			☑ @ 458', encountered first groundwater	-)=()=(1015	From 457' - 467', open borehole drilling; water injected to stabilize borehole.
460 -	<pre><2"diameter); 20% fines; wet; (80,0,20)</pre>			Temporary well PW-3-T01-466 screened from 461' - 466'. Static water level measured at 450.71'.		-3-T01-4 dwater S		e)		1020	
465 -	SILTY SAND (SM): light olive brown [2.5' 5/6]; trace fine gravel (angular to			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-3		W-3-T01 468.5 oil Samp	ИП	12- 7 19- 31	0%	1025	From 467' - 468.5', driv soil sample
470 -	subangular); 85% well-graded fine- to coarse-grained sand (angular to subangular); 15% fines; wet; (tr,85,15)				-	- - -	<u>`≓</u> (0759	hammer. From 467' - 477', rate of
475 -	CLAYEY SAND with GRAVEL (SC): light yellowish brown (2.5Y 6/4); 25% fine to coarse gravel (angular to subangular, <1.4 diameter); 40% poorly graded fine- to medium-grained sand; 35% fines; wet; no unusual odors; (25,40,35)	5"			-	- - - -	<u>:=(</u>			0804	From 477' - 487', producing lots of water rate of drilling is approximately 0.43

NAD-83 Zone \$

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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

LOCATION Rialto, CA

START DRILL DATE Jul 8, 04

FINISH DRILL DATE Jul 26, 04

ELEVATION DATA: GROUND SURF. NA ft TOP OF CASING 1611.81 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 170F 22

								MA	LES			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, e	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
485 -	SANDY CLAY with GRAVEL (CL): light yellowish brown [2.5Y 6/4]; 10% fine grav (angular to subangular, <0.5" diameter); 20% poorly graded fine- to medium-grain sand; 70% fines; slow dilatancy; wet; (10,20,70)				- - -						0830	
490 -	SANDY SILT with CLAY (ML-CL): light yellowish brown (2.57 6/4); 10% fine graves 25% well-graded medium- to coarse-grained sand; 65% fines (10% classes); wet; (10,25,65)				- - - -		<u>\</u>				0915	From 487' - 497', rate of drilling is approximately 0.43 ft/min.
495 - - -				Temporary well PW-3-T02-505 screened from 500' - 505'. Static water level measured at 458.00'.	- - - -						0923	
500 -	SILTY SAND with GRAVEL (SM): olive brown (2.5Y 4/4); 20% fine gravel (angulato subangular, <0.25" diameter); 50% well-graded medium- to coarse-grained sand (angular to subangular); 30% fines; wet; (20,50,30)				- - - PW	3-T02-	505				0955	@ 500', bottom of 11 3/4" diameter steel driv casing. Begin telescoping 10 5/8" diameter steel drive casing.
505 -				NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-3	(Groun <u>e</u> - - - -	dwater	Sampl	e)			0957	
<u>510 -</u>	RACTOR WDC Exploration & Wells	NORTHIN	1	NOTES:		I			l			

NAD-83 Zone \$

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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04 FINISH DRILL DATE Jul 26, 04 **ELEVATION DATA:**

GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 180F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SM): angular to subangular gravel; (20,50,30)				-					-	1008	@ 513', little to no free water observed.
515 -	CLAYEY SAND/SANDY CLAY (SC-CL): light olive brown [2.5Y 5/4]; 15% fine grave 45% well-graded fine- to coarse-grained sand; 40% fines; wet; (15,45,40)	∃ I;			-						1022	water observed.
520 -	@ 520' - 5% gravel; 60% well-graded fine- to coarse-grained sand; 35% fines; wet; (5,60,35)				- - - -						1055	
525 -	CLAYEY SAND (SC): olive brown [2.5Y 4/4]; 80% well-graded fine- to medium-grained sand; 20% fines; moist; (0,80,20)				- - -						1100	
530 -	Poorly Graded SAND (SP): light olive brown [2.5Y 5/4]; 95% fine-grained sand; 5% fines; damp; (0,95,5)				- - - -		<u>```</u>				1103	
535 -	Well Graded SAND (SW): olive brown [2.5Y 4/4]; 95% well-graded fine- to coarse-grained sand; 5% fines; damp; (0,95,5)				- - - -						1105	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

ELEVATION DATA:
GROUND SURF. NA ft

LOCATIONRialto, CATOP OF CASING 1611.81 ftPROJECT160-Acre Parcel, Rialto, CA DATUMNGVD-29

SHEET 190F 22

NUMBER HA0816

_ WEL	L BORE 12/03	ī								_	
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, et	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE BLOWS PER 6"	RECOVERY (%)	(mdd) s	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
545 - - - - - - - -	CLAYEY SAND/SANDY CLAY (SC-CL): light olive brown [2.5Y 5/4]; 55% well-graded fine- to coarse-grained sand; 45% fines; wet; (0,55,45) @ 545' - 15% fine gravels (angular to subangular, <0.2" diameter); 40% well-graded fine- to coarse-grained sand; 45% fines; wet (15,40,45) CLAYEY SILT (ML): yellowish brown [10YR 5/6]; no plasticity; dry; firm; mostly silt			© 540', encountered groundwater Temporary well PW-3-T03-545 screened from 540' - 545'. Static water level measured at 512.50'. NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-3	(Groun <u>c</u> - - - P\	3-T03-54 water Sa V-3-T03- 348-GT il Sampli	mple)	100	1	115	From 547' - 548.5', drive soil sample PW-3-T03-545 collected using a 325-lb hammer. @ 548', no free water observed.
555 - - - -	SILTY SAND (SM): olive brown [2.5Y 4/3 10% fine gravels (angular to subangular); 65% well-graded fine- to coarse-grained sand (angular to subangular); 25% fines; moist; (10,65,25)	;			- - - -		=		C)950	
560 - -	@ 560' - 5% fine gravel (angular to subangular); 80% well-graded fine- to coarse-grained sand (angular to subangular); 15% fines; damp; (5,80,15)				- - - -				1	1011	
565 - - - -	@ 565' - becomes dry				- - - -	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	=======================================		1	1017	
EQUI	RACTOR WDC Exploration & Wells PMENT Peterbilt SpeedStar 30K	NORTHIN EASTING	6740	260.99	<u> </u>	1	1	1	<u> </u>		

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



GS FORM:

WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04 **FINISH DRILL DATE** Jul 26, 04

ELEVATION DATA:
GROUND SURF. NA ft

GROUND SURF. NA ft
TOP OF CASING 1611.81 ft

SHEET 20 OF 22

PROJECT 160-Acre Parcel, Rialto, CA **DATUM** NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAME	PI F	<u>s</u>		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
575 -	SILTY SAND (SM) dry; (5,80,15)			Temporary well PW-3-T04-585 screened from 580' - 585'. Static water level measured at	- - - -						1030	
580 -	@ 580' - trace gravel; 85% well-graded fine- to medium-grained sand; 15% fines; very moist; (tr,85,15)			564.65'.	- - - - PW	3-T04-	585				1142	
585 -	Well-Graded SAND with GRAVEL (SW): light olive brown [2.5Y 5/4]; 15% fine gravel; 85% well-graded fine- to coarse-grained sand; trace fines; very moist; (15,85,tr)			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-3	(Groun <u>c</u> - - -	water	Sampl	e)			1151	Free water observed between 587' - 599'.
590 -	SILTY SAND/SANDY SILT (SM-ML): light olive brown [2.5Y 5/4]; 55% poorly graded fine-grained sand; 45% fines; wet; no plasticity; slow dilatancy; (0,55,45)				- - -		Sec					
595 -	@ 595' - trace gravel; 55% well-graded very fine- to coarse-grained sand (angular to subangular); 45% fines; wet; (tr, 55,45)				- - - -						1302	
600 - CONT	RACTOR WDC Exploration & Wells NC	ORTHING	3 18779	913.40 NOTES :	-							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

ELEVATION DATA: GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 21 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

VVELI	L BORE 12/03			NUMBER	TAU616			SAMP	LES	<u></u>		-
EPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE		RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 605 - -	SILTY SAND with GRAVEL (SM): olive brown [2.5Y 4/3]; 15% well-graded fine to coarse gravel (subangular to subrounded, <1" diameter); 60% poorly graded medium to coarse sand; 25% fines; moist; (15,60,25) @ 605' - 15% fine gravel; 70% poorly graded medium- to coarse-grained sand; 15% fines; moist; no plasticity; (15,70,15)			Temporary well PW-3-T05-615 screened from 610' - 615'. Static water level measured at 590.95'.	- - - -	-					0755 0800	
610 -	@ 610' - 70% well-graded medium- to coarse-grained sand; very moist; (15,70,15)				-	-)=(<u>)</u>				0847	
615 -				NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-3	PW- (Groun <u>c</u> -	3-T05-6		e)			0916	From 613' - 616', very difficult hammering due to heaving sands.
- 620 - - -	@ 620' - 20% fine to coarse gravel (angular to subangular, <2" diameter); 50% well-graded fine- to medium-grained sand; 30% fines; wet; (20,50,30)			@ 619', encountered groundwater	-	- -	×				0936	@ 622', borehole
- - 625 - -					- - -		<u>\</u>				0930	producing lots of water; water injected to clean out borehole.
630	FRACTOR WDC Exploration & Wells N	ORTHING	1977	913.40 NOTES :	-							@ 627' - bottom of 9 5/8" diameter steel driv casing. 8.5" diameter open borehole to total depth.

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-3

START DRILL DATE Jul 8, 04

FINISH DRILL DATE Jul 26, 04 LOCATION Rialto, CA

ELEVATION DATA: GROUND SURF. NA ft TOP OF CASING 1611.81 ft

SHEET 220F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

			1	I					SAMI		_		
DEPTH (ft-bgs)	1) Lithology	5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - - 635 -	Boring terminated a Permanent monitor piezometer PW-3A installed in the sam construction log for	at a depth of 629'. ing well PW-3 and was subsequently e borehole. Refer to well permanent well PW-3.				- - -							
640						- - - -							
- - 645 -						- - -							
- - 650 -						- - -							
- 655 - -						- - - -							
	FRACTOR WDC EXPINENT Peterbili		RTHING		013.40 0260.99 NOTES :	-							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



GeoSyntec Consultants

200 East Del Mar Boulevard, Suite 250 Pasadena, California 91105

Phone: (626) 449-0664

WELL CONSTRUCTION LOG

BELOW GROUND SURFACE COMPLETION:

Well Box: Flush-Mounted, Traffic-Rated Steel

Protective Covers: Locking Well Caps

0.020

slotted

Sch 80

5-ft

Sump

510

513

515

520

527

633

635

638

648

650

Boring ID: PW-4

Start Drill Date: 3 August 2004

Finish Drill Date: 11 September 2004 **Location: North Locust Avenue**

Project: 160-Acre Parcel, Rialto, CA

Number: HA0816 Logger: PL Reviewer: KA

Page 1 of 1

Elevation Top of Casings: 1626.56 ft MSL

Vert Datum: NGVD-29;

HVC-11 (Elev=1622.84)

Northing: 1878655.92 Easting: 6740248.93 Horiz Datum: NAD-83 Zone 5

DRILLING SUMMARY:

Total Boring Depth: 650 ft bgs

Drilling Method: Air Rotary Casing Hammer* Drilling Fluid: Air / Injected Water / Drilling Mud*

Contractor: WDC Exploration & Wells Drilling Rig: Peterbilt SpeedStar 30K and 100K

Telescoping Drive Casing Diameters: Tricone Drill Bit Diameters:

13 3/8" to 199 ft bgs 12 1/4" to 199 ft bgs 11 3/4" to 499 ft bgs 10 5/8" to 499 ft bgs 8 1/2" to 650 ft bgs 9 5/8" to 516 ft bgs

WELL CONSTRUCTION DETAILS:

Well Construction Dates: 13 through 18 September 2004

MONITORING WELL PW-4:

Total Well Depth: 515 ft bgs

Well Development Date: 28 September 2004

Blank Well Casing: Virgin, factory-sealed, flush-threaded, 4"-diam, Sch 80 PVC (from ground surface to 470 ft bgs); Well Screen Interval: Virgin, factory-sealed, flush-threaded, 4"-diam, 0.020" slotted, Sch 80 PVC (from 470 to 510 ft bgs)

Length of End Cap / Sump: 0.40 ft / 5.01 ft

Centralizers (2 total): PVC with metal screws (directly above

and below the screen interval)

PIEZOMETER PW-4A:

Total Piezometer Depth: 648 ft bgs

Blank Well Casing: Virgin, flush-threaded, 2"-diameter, Sch 40 carbon steel (from ground surface to 638 ft bgs) Well Screen Interval: Virgin, 2"-diameter, 0.020" slotted,

Sch 40 carbon steel (from 638 to 648 ft bgs)

Length of End Cap: None (bottom of well welded closed)

Centralizers (2 total): PVC with metal screws (above and below

the screen interval)

0 ft bgs CONCRETE: 3 x 60 lb/bag pre-mixed concrete Piez. Mont. BENTONITE SEAL: Well PW-4A 4 x 50 lb/bag Medium Bent. Chips PW-4 **GROUT SEAL:** Cement Slurry with 5% Bent. by Wt. Pumped through drive casing 35 x 94 lb/bag Type II/V Cement & 4" 3.5 x 50 lb/bag Bentonite Gel & diam, diam, ~350 gal Water 48 638-ft 400-ft BENTONITE SEAL: blank. blank, 10 x 50 lb/bag Medium Bent. Chips Sch. 80 Sch 40 58 **VOLCLAY GROUT SEAL:** Carbon **PVC** 58 x 50 lb/bag Volclay Grout Steel Pumped through drive casing ~2,520 gal Water 447 BENTONITE SEAL: 8 x 50 lb/bag Medium Bentonite Chips Flushed through 2" diam tremie pipe using drilling mud; >12 hr set-up time 458 TRANSITION SAND: 2.5 x 100 lb/bag Monterey Sand #2/16 461 SAND PACK: 470 24 x 100 lb/bag Monterey Sand #3 Flushed through 2" diameter

TRANSITION SAND:

tremie pipe using water

3 x 100 lb/bag Monterey Sand #2/16

BENTONITE SEAL:

3 x 50 lb/bag Medium Bentonite Chips Flushed through 2" diam tremie pipe using drilling mud; >30-min set-up time

GROUT SEAL:

Cement Slurry with 5% Bent. by Wt. Pumped through 2" diam tremie pipe 35 x 94 lb/bag Type II/V Cement & 1.5 x 50 lb/bag Bentonite Gel & ~150 gal water

BENTONITE SEAL:

10 x 50 lb/bag Medium Bentonite Chips Flushed through 2" diam tremie pipe using drilling mud; >30-min set-up time

TRANSITION SAND:

1.5 x 100 lb/bag Monterey Sand #2/16

SAND PACK:

9 x 100 lb/bag Monterey Sand #3 Flushed through 2" diameter tremie pipe using water

WELL DIAGRAM NOT TO SCALE

2" dia

10-ft.

0.020

slotted

Sch 40

Carbo Steel

TEMPORAR	RY WELLS	INSTA	LLED	T
Temporary Well ID	Installation Date	Well Depth (ft bgs)	Screen Interval (ft bgs)	Approx. Static Water Level (ft bgs)
PW-4-TO1-485	12-Aug-04	485	480 - 485	460.3
PW-4-TO2-525	13-Aug-04	525	520 - 525	464.42
PW-4-TO3-575	16-Aug-04	575	570 - 575	566.10
PW-4-TO4-617.5	19-Aug-04	617.5	612.5 - 617.5	615.55
PW-4-TO5-625	23-Aug-04	625	620 - 625	567.90
PW-4-TO6-647.5	26-Aug-04	647.5	642.5 - 647.5	615.50

DRIVE SOIL SAMPI	LES COLLECTED	
Soil Sample ID	Sampling Depth (ft bgs)	Sample Date
PW-4-TO1-487.5-GT	487.5	12-Aug-04
PW-4-TO2-527.5-GT	527.5	13-Aug-04
PW-4-601.5-GT	601.5	18-Aug-04

NOTES: *The initial drilling to a depth of 648 ft bgs was completed in August 2004 using ARCH drilling techniques. However, during installation of the permanent wells, technical difficulties, including significant caving of the formation, as well as mechanical problems with the drilling rig were encountered . While drilling out the caved materials and reestablishing the borehole to depth, refusal was encountered at a depth of ~617 ft bgs. As a result, mud rotary drilling techniques were employed to reinstall the permanent wells.



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GS FORM: WELL BORE 12/03

BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 1 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

****	BORE 12/03							SAMI	PLES			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
5 -	ARTIFICIAL FILL Asphalt Surface; 3" thick Well-Graded GRAVEL with SAND (GW): olive brown [2.5Y 4/4]; 50% well-graded fir and coarse gravel; 20% cobbles (<8" diameter); 30% well-graded fine- to coarse-grained sand; trace fines; dry; medium dense (70,30,tr)	0 0 € € € € 1 € 6 € €			- - - -						1500	Borehole telescoping diameters and approximate depths: 13 3/8" diameter steel casing (0' - 199'), 11 3/4" diameter steel casing (199' - 499') 9 5/8" diameter steel casing (499' - 516'), 8 1/2" diameter open borehole (516' - 650'). Air knifing from 0' - 7'. Grab sample collected every 5' unless otherwise noted.
- 10 - -	@ 10' - color change to very dark grayish brown [2.5Y 3/2]; wet due to water injection subangular to subrounded gravel				-						1055	Water injected into borehole to assist in removing cuttings; no headspace reading due to continued water injection.
- 15 - -	@ 15' - gravel sizes <1.5" diameter				-		<u></u>				1330	
20 -					- - -						1215	
- 25 - -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): olive gray [5Y 4/2]; 40% well-graded fine to coarse gravel (angular to subangular, <1.5" diameter); 40% well-graded fine- to coarse-grained sand; 20% fines; damp due to water injection; (40,40,20)				-		<u>\</u>				1219	
30 -	RACTOR WDC Exploration & Wells	NORTHING	18786	 								
EQUI	PMENT Peterbilt SpeedStar 30K	EASTING COORDINA	67402	248.93								

NAD-83 Zone 5

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: **BOREHOLE LOG** WELL BORE 12/03

BORING PW-4

LOCATION Rialto, CA

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM **NUMBER** HA0816

NGVD-29

SHEET 2 OF 22

								SAMI	PLES			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
	SANDY GRAVEL/GRAVELLY SAND (GW-SW): large cobbles/boulders; (40,40,20)				- - -						1228	
35 -					- - -						1240	From 38' - 41', difficult drilling due to large
40 -	@ 40' - color change to olive [5Y 4/3]; wet due to water injection				- - -						1520	cobbles/boulders.
45 - - -					- - -		= (0950	
50 - - -	SANDY GRAVEL with SILT (GW): olive gray [5Y 4/2]; 55% well-graded fine to coarse gravel (angular to subrounded, <1.5" diameter); 30% well-graded mediumto coarse-grained sand; 15% fines; wet due to water injection; (55,30,15)				- - -						0952	
55 - - - -					- - - -						1003	
1		ORTHING										
1	•	STING		248.93								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04

ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 3 OF 22

EPTH t-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SANDY GRAVEL with SILT (GW): gravel size <1.5" diameter; (55,30,15)				- - -		=			ш	1006	
65 -	SILTY SAND with GRAVEL (SW-SM): olive [5Y 4/3]; 35% fine and coarse gravel; 45% well-graded fine- to coarse-grained sand; 15% fines; moist due to water injection; (35,45,15) @ 68' - large cobbles/boulders	6			- - -		×				1125	From 68' - 105', very
70 -	SANDY GRAVEL with SILT (GW): olive [5Y 4/3]; 55% well-graded fine to coarse gravel (angular to subangular, <2" diameter); 30% well-graded medium- to coarse-grained sand (angular to subangular); 15% fines; wet due to water injection; (55,30,15)				- - - -		<u> </u>				1133	difficult drilling due to large cobbles/boulders
75 -					- - - -						1138	
80 -	@ 80' - large cobbles/boulders				- - - -						1405	
85 -					- - - - -						1409	

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 4 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

							S	MA	PLES			
DEPTH (ft-bgs)	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SANDY GRAVEL with SILT (GW): color change to light olive brown [2.5Y 5/3]; (55,30,15)				- - -						1418	
95 - - -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): light olive brown [2.5Y 5/3]; 40% well-graded fine to coarse gravel (angular to subrounded, <2" diameter); 40% well-graded medium- to coarse-grained sand; 20% fines; wet due to water injection; (40,40,20)				- - -		, H				1426	From 96' - 116', rate o drilling is approximatel 0.91 ft/min.
100 -	@ 100' - decrease in fine gravel to 35% (angular to subangular, <0.75" diameter); 50% well-graded medium- to coarse-grained sand; 15% fines; wet due to water injection; (35,50,15)				- - - -						1447	
105 -	@ 105' - increase in fine to coarse gravel to 45% (angular to subrounded, <1" diameter); 40% well-graded medium- to coarse-grained sand; 15% fines; wet due to water injection; (45,40,15)				- - -		=				1450	
110 -	@ 110' - decrease in fine gravel to 35% (angular to subangular, <0.5" diameter); 40% well-graded fine- to coarse-grained sand; 25% fines; wet due to water injection; (35,40,25)				- - -						1457	
115 -	@ 115' - increase in fine to coarse gravel to 40% (angular to subrounded, <1" diameter); 40% well-graded fine- to coarse-grained sand (angular to subrounded); 20% fines; wet due to water injection; (40,40,20)				- - - -]=()				1504	From 116' - 136', rate drilling is approximate 0.71 ft/min.

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

Jul 23, 04 ELEVATION DATA:

START DRILL DATE Jul 23, 04 **FINISH DRILL DATE** Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 5 OF 22

PROJECT 160-Acre Parcel, Rialto, CA **DATUM** NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6" MAS	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): well-graded fine to coarse gravel (<1" diameter); (40,40,20)				- - -		J.I.				1525	
125 -					- - -						1530	
130 -					- - - -						1535	
135 -	@ 135' - wet due to water injection				- - - -		TH.				1545	From 136' - 156', rate drilling is approximate 0.71 ft/min.
140 -					- - - -						1605	
145 -	@ 145' - 40% angular to subrounded well-graded fine- to coarse-grained sand; (40,40,20)				- - - -		T				1611	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

GROUND SURF. NA ft

FINISH DRILL DATE Aug 25, 04 **LOCATION** Rialto, CA

TOP OF CASING 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM
NUMBER HA0816

NGVD-29

SHEET 6 OF 22

								SAMI	PLES			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): decrease in gravel sizes to <0.5" diameter; (40,40,20)				- - -						1619	
155 - - - -		00000000000000000000000000000000000000			- - - -		<u>`=</u>				1625	
160 -	Well-Graded GRAVEL with SAND (GW): olive [5Y 4/4]; gravel/cobble fragments (angular, <0.5" diameter); fines primarily coating gravel fragments; (60,35,5)				- - - -						0725	Continuous injection of water into borehole to remove cuttings.
165 - - -					- - - -							
170 -					- - -		<u>`</u> =(
175 - - -	@ 175' - very angular gravel/cobble fragments				- - - -							
EQUII	PMENT Peterbilt SpeedStar 30K EA	ORTHING ASTING	67402	248.93	<u> </u>		1 !	1	<u> </u>	<u> </u>		1

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 7 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

								SAMI		_		
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
185 -	Well-Graded GRAVEL with SAND (GW): angular, fine to coarse gravel; (60,35,5) @ 185' - gravel sizes <0.5" diameter (cobble fragments)				- - - -						1615	
190 -					- - - -						1645	
195 -	@ 195' - very large cobbles/boulders				- - - -		<u>`</u> ;≡				1700	From 197' - 217', rate of drilling is approximately 0.59 ft/min.
-	SILTY SAND with GRAVEL (SW-SM): olive brown [2.5Y 4/3]; 25% fine gravel (angular to subangular fragments <0.5" diameter); 55% well-graded very fine- to coarse-grained sand; 20% fines; moist due to water injection; (25,60,15)				- - - -		SEC				1120	
205 -					- - - - -		<u> </u>				1125	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

GEOSYNTEC CONSULTANTS

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BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 8 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SILTY SAND with GRAVEL (SW-SM): 25% fine gravel (angular to subangular, <0.5" diameter); (25,60,15)				- - -		H				1130	
215 -					-]:=[1142	
-	Well-Graded GRAVEL (GW): grayish brown [2.5Y 5/2]; 80% gravel (angular cobble fragments, <0.75" diameter); 10% well-graded fine- to coarse-grained sand; 10% fines; dry; (80,10,10)				- - -						1150	From 217' - 237', rate o drilling is approximately 0.59 ft/min.
220 -	SILTY SAND with GRAVEL (SW-SM): olive brown [2.5Y 4/3]; 30% fine gravel (angular fragments, <0.5" diameter); 45% well-graded fine- to coarse-grained sand; 25% fines; moist due to water injection into borehole; (30,45,25)	D. (\			- - - -)II(1319	
225 -					- - -						1325	
230 -					- - - -		H				1335	
235 -	@ 235' - decrease in gravels to 15% (angular to subangular, <0.25" diameter); 70% well-graded fine- and coarse-grained sand; 15% fines; damp due to water injection into borehole; (15,70,15)				- - - -		=				1340	From 237' - 257', rate of drilling is approximately 1.05 ft/min.
EQUIF	PMENT Peterbilt SpeedStar 30K EA	RTHING STING ORDINA	67402	248.93								

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 9 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

								SAMI	PLE:	s		
DEPTH (ft-bgs)		GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SW-SM): 70% well-graded fine- to coarse-grained sand; (15,70,15)				- -						1400	
245 -					- - - -						1403	
- 250 - -					- - -						1407	
255 -	@ 255' - color change to yellowish brown [10YR 5/4]				- - - -						1410	From 257' - 277', rate o
260 -					- - - -		Sec				1425	drilling is approximately 0.69 ft/min.
265 -	@ 265' - moist due to water injection into the borehole				- - - -						1428	
270]	RACTOR WDC Exploration & Wells NO	ORTHING	18786	655.92 NOTES :	_							

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 10 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

EPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, e	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ff)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SW-SM): color change to olive brown [2.5Y 4/3]; (15,70,15)				-	-				-	1432	
275 -	@ 275' - decrease in gravel size to <0.1" diameter				- - -						1447	From 277' - 297', rate drilling is approximatel 1.25 ft/min.
280 -	@ 280' - color change to light olive brown [2.5Y 5/4]; 5% fine gravel (angular to subangular); 75% well-graded very fine-fine- sand (angular to subangular); 20% fines; damp due to water injection; (5,75,	to			- - - -						1500	
285 -					- - - -						1505	
290 -					- - - -						1509	
- 295 - - -	@ 295' - 10% fine gravel (angular, <0.5" diameter); 75% well-graded very fine- to medium-grained sand; 15% fines; dry;(10,75,15)				- - - -						1512	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04 LOCATION Rialto, CA

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 11 OF 22

								SAMI	PLE			
DEPTH (ft-bgs)	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND with GRAVEL (SW-SM): color change to olive brown [2.5Y 4/4]; 10% fine gravel; 80% well-graded very fine- to medium-grained sand (angular to subangular); 20% fines; damp; (10,70,20)				- - -						1537	
305 - - - -					- - - -						1541	
310 - - - -	@ 310' - 10% fine gravels (angular to subangular, <0.25" diameter); 55% well-graded very fine- to fine-grained sand; 35% fines; damp; (10,55,35)				- - - -						1545	
315 - - - -					- - - -		Sec				1548	
320 - - - -					- - - -		i i				1607	
325 - - - - -	@ 325' - damp due to water injection into the borehole				- - - -						1610	
330 -	FRACTOR WRO F. I. II. A. III. II.	RSSHIT.	1	I NOTES		l						
		ORTHING										
		ASTING		248.93								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 120F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

1					_		S	AME			
DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SILTY SAND with GRAVEL (SW-SM): 10% fine gravel (<0.25" diameter); (10,55,35)				-		<u>`</u> ≓			1	615
	@ 335' - 10% fine gravel; 55% well-graded angular to subangular fine- to coarse-grained sand; 35% fines; moist due to water injection; (10,55,35)				-		<u></u>			1	625
340 -					-		SEC			1	240
345 -	@345' - damp due to limited water injection into the borehole				-					1	304
350 -					-)=(1			1	319
355 -	@355' - angular to subangular sand grains; (10,55,35)				-		<u>\</u>			1	From 357' - 377', rate drilling is approximate 1.33 ft/min.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-4

Jul 23, 04 **ELEVATION DATA**:

START DRILL DATE Jul 23, 04 **FINISH DRILL DATE** Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

NGVD-29

SHEET 13 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NUMBER HA0816

LOCATION Rialto, CA

	DECODIDATION	(1)			Ð		S	AMF				
EPTH t-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, et	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SILTY SAND with GRAVEL (SW-SM): 10 fine gravel (angular to subangular); (10,55,35)	0%			- - -	-					1443	
365 - - -					- - -	-					1449	
- 370 - - -					- - - -	-	<u>}=(</u>				1453	
- - - - -	@ 375' - color change to dark yellowish brown [10YR 4/6]; 5% fine gravel (angula to subangular, <0.25" diameter); 80% well-graded fine- to medium-grained sand 15% fines; damp due to limited water injection; (5,80,15)	r !;			- - - -	-	<u>)=(</u>				1522	
- 08 - - -					- - - -	-	<u>`=(`</u>				1553	
385 - - - -	@ 385' - decreasing fines				- - - -	-	<u>)=(</u>				1601	From 387' - 417', very difficult drilling/hammering (possible cemented zone).

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

07-WELL BORE RIALTOHA0816 04 JH.GPJ GEOSNTEC.GDT 3/24/05

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly



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GS FORM: WELL BORE 12/03

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 **ELEVATION DATA:**

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 140F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6" WE	RECOVERY (%)	READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded SAND (SW): light olive brown [2.5Y 5/3]; 10% fine gravel (angular, fragmented, <0.2" diameter); 85% fine- to coarse-grained sand (angular, fragmented); 5% fines; dry; (10,85,5)				- - -		():=()			PID	1630	
395 -					- - -)¥				1650	
400 -					- - - -		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				0837	@ 400', terminated water injection into borehole.
- 405 - -	@ 405' - dry				- - - -		<u></u>				1145	
410 -					- - - -						1322	
- 415 - - -	@ 415' - increasing fines				- - - -						1335	
420	@ 415' - increasing fines				- - -						1335	

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 15 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	Well-Graded SAND (SW): angular to subrounded fine gravel; (10,85,5)				-		Ħ			_	0836	
425 -					_ - -	-					0839	
430 -	SANDY SILT/SILTY SAND (ML): dark yellowish brown [10YR 4/6]; 5% fine gravel (angular to subrounded, <0.15" diameter); 45% poorly graded fine sand; 50% fines; damp; (5,45,50)				- - - -		=				0854	
435 -	@ 435' - trace fine gravel; 40% poorly graded fine sand; 60% fines; damp; no unusual odors; (tr,40,60)				- - - -		<u> </u>			•	0900	
- 440 - - -	SANDY SILT with CLAY (ML-CL): dark yellowish brown [10YR 3/6]; trace fine gravel; 30% poorly graded fine-grained sand; 70% fines; low plasticity; damp; (tr,30,70)				- - - -		<u>`</u> =`				0914	
- 445 - - -	SANDY SILT with CLAY (ML): yellowish brown [10YR 5/4]; trace fine gravel; 40% well-graded fine- to coarse-grained sand; 60% fines; damp; low plasticity; (tr,40,60)				- - - -]= <u> </u>				0920	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 160F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH (ft-bgs)		GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
-	SILTY SAND (SM): olive brown [2.5Y 4/4]; 5% fine gravel (angular to subangular, <0.1" diameter); 85% well-graded fine- to coarse-grained sand; 10% fines; damp; (5,85,10)				- -		;=(<u>a.</u>	0945	
- 455 - - -	@ 455' - trace fine gravel; 70% poorly graded fine-grained sand; 30% fines; moist; (tr,70,30)				- - - -		=				0951	From 457' - 470', no frowater encountered.
460 -	@ 460' - increase in fine gravel to 5% (angular to subangular, <0.15" diameter); 85% well-graded fine- to coarse-grained sand; 10% fines; moist; (5,85,10)				- - - -		<u>`</u> =				1000	
- 465 - - -	@ 465' - color change to light olive brown [2.5Y 5/6]; trace fine gravel; 85% poorly graded very fine-grained sand; 15% fines; moist; (tr,85,15)				- - - -						1003	From 467' - 480', no fr water encountered.
- 470 - - -	@ 470' - 5% fine gravel (angular to subangular, <0.2" diameter); 75% well-graded very fine- to coarse-grained sand; 20% fines; moist; (5,75,20)				- - - -		<u></u>				1006	
- 475 - - - -				@ 480', encountered	- - - - -		=				1040	
480 -	RACTOR WDC Exploration & Wells No.	ORTHING	18786	first groundwater								

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



LOGGER Phuong Ly

REVIEWER Walt Grinyer, P.G.

GEOSYNTEC CONSULTANTS

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BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

NGVD-29

SHEET 17 OF 22

LOCATION Rialto, CA

DEPTH ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO. TYPE	BLOWS PER 6"	RECOVERY (%)	RE	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
- - -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): olive brown [2.5Y 4/4]; 40% well-graded fine and coarse gravel (angular to subangular, <0.5" diameter); 35% well-graded fine- to coarse-grained sand; 25% fines; wet; (40,35,25)			Temporary well PW-4-T01-485 screened from 480' - 485'. Static water level measured at 460.3'. NOTE: TEMPORARY WELL SHOWN.	PW-4-	T01-485	ole)			1049	,,
485 -	SILTY SAND/SANDY SILT (SM-ML): light olive brown [2.5Y 5/4]; 10% fine gravel (angular to subangular, < 0.2" diameter); 55% poorly graded fine sand; 35% fines; wet; (10,55,35) @ 486' - color change to dark yellowish brown [10YR 4/6]; trace coarse-grained sand and 40% very fine-grained sand; 60% fines; damp; no plasticity; (0,40,60)			PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-4	487	4-T01- 5-GT Sample1	7- 11- 16	60	1	1315	From 486' - 487.5', dri soil sample PW-4T01-487.5-GT collected using a 325- hammer. From 487.5' - 526', borehole producing
490 -	@ 490' - 30% fine and coarse gravel (angular to subangular, < 0.5" diameter); 30% well-graded fine- to coarse-grained sand (angular to subrounded); 40% fines; wet; (30,30,40)				-		-		C	0906	abundant water.
495 -	SANDY GRAVEL/GRAVELLY SAND (GW-SW): light olive brown [2.5Y 5/4]; 40% fine and coarse gravel (angular to subangular, <0.5" diameter); 40% well-graded fine- to coarse-grained sand (angular to subrounded); 20% fines; wet; (40,40,20)				- - - -	<u> </u>	_		C	0915	@ 400! bettern of 44
500 -	@ 500.5' - Well-Graded SAND with SILT (SW-SM): brown [10YR 4/6]; 90% poorly graded very fine sand; 10% fines; wet; (0,90,10) @ 501' - 5% fine gravel (angular to subangular, <0.75" diameter); 85% well-graded fine- to coarse-grained sand; 10% fines; wet; (5,85,10)				-		20- 28- 42	60	1	1049	@ 499', bottom of 11 3/4" diameter steel dricasing. Begin telescoping 9 5/8" diameter steel drive casing. From 500' - 501.5', dr soil sample collected using a 325-lb hamme
505 -	@ 501.5' - SILTY CLAY (CL): olive [5Y 4/3]; high toughness, hard, dry SILTY SAND (SM): olive brown [2.5Y 4/4]; 10% fine and coarse gravel (angular to subangular, <1" diameter); 70% well-graded fine- to coarse-grained sand; 20% fines; wet; (10,70,20)				-		-		1	1508	



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105

Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-4

LOCATION Rialto, CA

NUMBER

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

HA0816

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM

NGVD-29

SHEET 180F 22

								SAMI	PLE	s		
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
515 -	SILTY SAND (SM): fine to coarse gravels <1" diameter; (10,70,20)			Temporary well PW-4-T02-525 screened from 520' - 525'. Static water level measured at 464.42'.	- - - -						1510	From 516' - 526', borehole generating abundant water.
520 -					- - -		ે≓ે				1524	
525 -	@ 525' - wet			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-4	(Groun <u>d</u> - - P\ 5	4-T02- lwater : V-4-T0 27.5-G il Sam	Sampl	e) 7- 30- 44	40		1520	From 526' - 541', borehole generating abundant water.
530 -					- - -		<u> </u>				1033	
535 -	@ 535' - 20% fines (10,70,20)				- - - - -		II				1035	
540 CONT	RACTOR WDC Exploration & Wells N	ORTHING	 18786	655.92 NOTES :								

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

TOHA0816 04

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly



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Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 190F 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

									SAMI	PLES			
DEPTH ft-bgs)		SCRIPTION 5) Content (%) 6) Plasticity 7) Hardness 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitorin
- -	SANDY SILT with brown [2.5Y 5/4]; sand and trace me fines; wet; slow di	CLAY (ML-CL): light olive 30% very fine-grained edium-grained sand; 70%				- - -						1047	@ 541', decreasing water production in borehole.
545 -						-						1049	
550 -						- - -						1052	@ 552', no free wate observed.
555 - - - -	Well-Graded SAN 4/4]; 90% medium 10% fines; moist;	D (SW): olive brown [2.5Y) to coarse-grained sand; (0,90,10)				-						1100	From 556' - 576', borehole producing abundant water.
560 -	@ 560' - trace fine 90% well-graded t sand; 10% fines; o	e gravel (<0.2" diameter); fine- to medium-grained dry; (tr,90,10)				-						1115	
565 -	@ 565' - dry				@ 570', encountered groundwater	-						1117	

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.



200 E. Del Mar Boulevard Suite 250 Pasadena, California 91105 Tel: (626) 449-0664 Fax: (626) 449-0411

GS FORM: WELL BORE 12/03

BOREHOLE LOG

BORING PW-4

LOCATION Rialto, CA

Jul 23, 04 ELEVATION DATA:

START DRILL DATE Jul 23, 04 **FINISH DRILL DATE** Aug 25, 04

GROUND SURF. NA ft TOP OF CASING 1626.56 ft

PROJECT 160-Acre Parcel, Rialto, CA DATUM NUMBER HA0816

NGVD-29

SHEET 20 OF 22

CWLL	L BORE 12/03		I					SAME	PI FS			
DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	(%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
575 - -	Well-Graded SAND (SW): damp to moist; (tr,90,10) @ 575' - increase in fine to coarse gravel to 20% (angular to subangular, <1.25" diameter); 60% well-graded fine- to coarse-grained sand; 20% fines; damp to moist; (20,60,20)			Temporary well PW-4-T03-575 screened from 570' - 575'. Static water level measured at 567.90'. NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR PERMANENT WELL PW-4	PW (Ground	4-T03- lwater		e)			1127	From 575'- 586', very difficult drilling.
580 - - - - - 585 -	CLAYEY SAND/SANDY CLAY (SC-CL): olive brown [2.5Y 4/3]; 20% fine and coarse gravel (angular to subrounded, <0.75" diameter); 35% well-graded fine- to coarse-grained sand; 35% fines; wet; no plasticity; slow dilatancy; (20,35,35) @ 582' - Well-Graded GRAVEL with SILTY SAND (GW-SM): olive brown [2.5Y 4/3]; 40% fine and coarse gravel (angular to subrounded, <1" diameter); 30% well-graded medium- to coarse-grained sand; 30% fines; wet; (40,30,30)				- - - -						0855 0815	
 - 590 -	SANDY SILT with CLAY (ML-CL): olive brown [2.5Y 4/4]; trace fine gravel; 30% poorly graded fine-grained sand; 70% fines (50% silt, 20% clay); wet; slow dilatancy; no plasticity; (tr,30,70) SILTY SAND (SM): olive brown [2.5Y 4/4]; 70% poorly graded fine- to medium-grained sand (angular to subangular); 30% fines; wet; (0,70,30)				- - - -		<u> </u>				0840	From 587' - 591', borehole producing abundant water. From 591' - 596', very difficult drilling.
- 595 - - - -	@ 595' - increase in sand grain size to poorly graded medium- to coarse-grained; wet; (tr,70,30)				- - - - -		II.				0850	From 596' - 606', very difficult hammering/drilling.
	RACTOR WDC Exploration & Wells NC	RTHING	 									
		STING										

EASTING 6740248.93

COORDINATE SYSTEM:

REVIEWER Walt Grinyer, P.G.

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

37-WELL BORE RIALTOHA0816_04_JH.GPJ GEOSNTEC.GDT 3/24/05

EQUIPMENT Peterbilt SpeedStar 30K

DRILL MTHD Air Rotary Casing Hammer

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly



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GS FORM: WELL BORE 12/03

LOGGER Phuong Ly

BOREHOLE LOG

REVIEWER Walt Grinyer, P.G.

BORING PW-4

ELEVATION DATA:

START DRILL DATE Jul 23, 04 FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft **TOP OF CASING** 1626.56 ft

SHEET 21 OF 22

PROJECT 160-Acre Parcel, Rialto, CA DATUM NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

							٥.	SAMP	LES	.		
1) Lithology 5) Col 2) Color 6) Pla 3) Moisture 7) Hal	ntent (%) sticity rdness	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
olive brown [2.5Y 5/6]; 50% fine- to medium-grained sa	poorly graded nd; 50% fines;				6	01.5-G	ηИΙ		40	_	1415	From 600' - 601.5', dr soil sample PW-4-601.5-GT collected using a 325 hammer.
[10YR 4/6]; 70% well-grade	ed fine- to				-						1515	
				Temporary well PW-4-T04-617.5 screened from 612.5' - 617.5'. Static water level measured at 615.55'.	- - -		SEC				1519	
				Temporary well				e)			1612	
				PW-4-T05-625 screened from 620' - 625'. Static water level measured at 567.9'. NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION	- - - - PW-	4-T05-					1613	
olive brown [2.5Y 5/4]; 35% gravel (angular to subround diameter); 40% well-graded coarse-grained sand; 25%	o fine and coarse ded, <1.25" If fine- to fines (trace			LOG FOR PERMANENT WELL PW-4 @ 625', encountered groundwater	(Ground	water	Sampl	e)			1710	
	1) Lithology 5) Cot 2) Color 6) Pla 3) Moisture 7) Hat 4) Grain Size 8) Ott SANDY CLAY with SILT (Solive brown [2.5Y 5/6]; 50% fine- to medium-grained sa no plasticity; very moist to volve to the same strain of the same st	2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist;	A) Grain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) SILTY SAND with GRAVEL (SW): light olive brown [2.5Y 5/4]; 35% fine and coarse gravel (angular to subrounded, <1.25" diameter); 40% well-graded fine- to coarse-grained sand; 25% fines (trace)	A) Grain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.57 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) SILTY SAND with GRAVEL (SW): light olive brown [2.57 5/4]; 35% fine and coarse gravel (angular to subrounded, <1.25" diameter); 40% well-graded fine- to coarse-grained sand; 25% fines (trace	A) Grain Size 8) Other (Staning, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW-4-T04-617.5 screened from 612.5' - 617.5'. Static water level measured at 615.55'. Temporary well PW-4-T04-617.5 screened from 612.5' - 617.5'. Static water level measured at 615.55'. Temporary well PW-4-T05-625 screened from 620' - 625'. Static water level measured at 567.9'. NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL SHOWN, PLEASE REFER	A) Grain Size 8) Other (Staming, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.57 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0.70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW-4-T04-617.5 screened from 612.5; screened from 612.5; Screened from 612.5; Screened from 612.5; Screened from 620*-625. Static water level measured at 615.55. Temporary well PW-4-T05-625 screened from 620*-625. Static water level measured at 657.9; NoTe: TEMPORARY Well SHOWN, PLEASE REFER TO WELL SHOWN PLEASE REFER TO WELL SHOW	A) Grain Size 8) Other (Staning, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]: 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]: 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW-4-T04-617.5 screened from 612.5 - 617.5: Static water level measured at 615.55: Temporary well PW-4-T04-617.5 screened from 612.5 - 617.5: Static water level measured at 615.55: Temporary well PW-4-T04-625 screened from 612.5 - 617.5: Static water level measured at 567.9. NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL SHOWN WELL SH	A) Grain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW-4-T04-617.5 static water level measured at 615.55: Temporary well PW-4-T04-617.5 static water level measured at 615.55: Temporary well PW-4-T04-617.5 static water level measured at 615.55: Temporary well PW-4-T04-617.5 static water level measured at 615.55: Temporary well PW-4-T04-617.5 screened from 612.5 creened from 620 c.625 static water level measured at 557.9 NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL SHOWN WELL SHOW	A) Grain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.57 5/6]; 50% poorly graded fine-to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [107R 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines, very moist; (0,70,30) Temporary well PW-4-T04-617.5 screened from 612.5' -617.5 Static water level measured at 615.55'. PW-4-T04-617.5 (Groundwater Sample) Temporary well PW-4-T06-625 screened from 620 - 625'. Static water level measured at 615.55'. NOTE: TEMPORARY WELL SHOWN. PLEASE REFER TO WELL SHOW	A) Grain Size 8) Other (Stainline, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.57 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity, very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW-4-T04-617.5 screened from 12.5 screened from 12.5 screened from 620 - 625. Static water level measured at 615.55. Temporary well PW-4-T04-617.5 (Groundwater Sample) PW-4-T04-617.5 (Groundwater Sample) Temporary well PW-4-T04-617.5 (Groundwater Sample) PW-4-T04-617.5 (Groundwater Sample)	A) (rian size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.57 5/6]; 50% poorly graded fine-to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70,30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70,30) Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured at 615.55: Temporary well PW4-T04-617.5 Static water level measured	A) Orain Size 8) Other (Staining, etc.) SANDY CLAY with SILT (SC-ML): light olive brown [2.5Y 5/6]; 50% poorly graded fine- to medium-grained sand; 50% fines; no plasticity; very moist to wet; (0,70.30) SILTY SAND (SM): dark yellowish brown [10YR 4/6]; 70% well-graded fine- to coarse-grained sand; 30% fines; very moist; (0,70.30) Temporary well PV4-T0-4617.5 static water [10,70.30] Temporary well PV4-T0-4617.5 (Groundwater Sample) PV4-T0-4617.5 Static water [10,70.30] Temporary well PV4-T0-4617.5 (Groundwater Sample) PV4-T0-4617.5 (Groundwater Sample) PV4-T0-4617.5 (Groundwater Sample) Temporary well PV4-T0-4617.5 (Groundwater Sample) PV4-T0-4617.5 (Groundwater Sample)

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM: WELL BORE 12/03

DIAMETER 13 3/8", 11 3/4", 9 5/8"

LOGGER Phuong Ly

BOREHOLE LOG

BORING PW-4

START DRILL DATE Jul 23, 04 ELEVATION DATA:

FINISH DRILL DATE Aug 25, 04

GROUND SURF. NA ft TOP OF CASING 1626.56 ft

SHEET 220F 22

PROJECT 160-Acre Parcel, Rialto, CA **DATUM** NGVD-29

NUMBER HA0816

LOCATION Rialto, CA

DEPTH (ft-bgs)	DESCRIPTION 1) Lithology 5) Content (%) 2) Color 6) Plasticity 3) Moisture 7) Hardness 4) Grain Size 8) Other (Staining, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER/ STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	TIME	COMMENTS 1) Rig 2) Odor 3) Air Monitoring
635 -	SILTY SAND with GRAVEL (SW): decreasing gravels; (35,40,25)				- - - -						1110	
640 -	@ 640' - decrease in gravel to 5%; 90% well-graded fine- to coarse-grained sand; 5% fines; very moist to wet			Temporary well PW-4-T06-647.5 screened from 642.5' - 647.5'. Static water level measured at 615.45'.	- - - -						1645	@ 642', due to limited
645 -	@ 645' - becomes wet			NOTE: TEMPORARY WELL SHOWN, PLEASE REFER TO WELL CONSTRUCTION LOG FOR	PW-4 (Ground	-T06-€ lwater	:= 347.5 Sampl	e)			1315	recovery of cuttings, injected water into borehole and resumed drilling. @ 645', borehole producing abundant water. @ 646', no free water observed; bottom of 9 5/8" diameter steel driv casing. Due to equipment problem
650 -				PERMANENT WELL PW-4	- - -							encountered during permanent well installation, 9 5/8" diameter steel casing was removed from the
655 -	Boring terminated at a depth of 650'. Permanent well PW-4 and piezometer PW-4A was subsequently installed in the borehole. Refer to well construction log for monitoring well PW-4 and piezometer PA-4A.				- - - - -							borehole and mud drilling techniques wer employed to total depti (with approval from USEPA). @ 648', very limited fre water observed.
660 CONT	RACTOR WDC Exploration & Wells NC	RTHING	1879	 	_							

NAD-83 Zone \$

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

REVIEWER Walt Grinyer, P.G.

BORING NO .:

N-1

PAGE: 1

SITE LOCATION: DRILLING METHOD: CONTRACTOR:

JOB NO.: 2002-054 TE LOCATION: MID-VALLEY SANITARY LANDFILL ING METHOD: AIR ROTARY CASING HAMMER CONTRACTOR: WDC EXPLORATION AND WELLS LOGGED BY: J. FINEGAN, CHG

DATE STARTED: DATE FINISHED: ELEVATION: NORTHING:

8/06/02 8/12/02 1570.52 feet 1875630.26 EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
9:05				Grob		5-			GW	ALLUVIUM: Dark grayish brown (10YR 4/2), poorly sorted, subangular, medium to very coarse SANDY GRAVEL with minor SILT, COBBLES and BOULDERS.	Begin drilling with 9-5/8" drive pipe, 8-1/2" button bit. Dry cuttings. Cuttings slightly moist.
	1.05			Grob		10			SP	Grayish brown (10YR 5/2), moderately sorted, angular to rounded, medium to coarse SAND with minor SILT.	Brox TSSIT
				Grab		15			GW	Grayish brown (10YR 4/2 to 5/2), poorly sorted, subangular to rounded, medium to very coarse SANDY GRAVEL with minor SILT, COBBLES and BOULDERS.	
9:24 9:36				Grab		20		5 45 C		(20") - less SAND than above.	261
				Grab		25		Strategister 6	SM	Light olive brown (2.5Y 5/3), moderately sorted, subrounded, very fine to fine SILTY SAND with minor rounded granitic GRAVEL and trace coarse SAND.	
	1.54			Grab		30		N. S. S. C. S.		(27') — more coarse SAND and GRAVEL than above.	100
				Grab		35		12	SW	Dork groyish brown (10YR 4/2), poorly sorted, angular to subraunded, medium to very coarse, arkosic GRAVELLY SAND with GRAVEL.	
9:49 10:04				Grab	AV	40					153
				Grab		45		1,15,11,15	GW	Grayish brown (10YR 5/2), poorly sorted, angular to subangular SANDY GRAVEL with fine to coarse SAND and minor SILT,	
	1.43			Grab		50		145570041455105105	SM	Poorly sorted, very fine to fine SILTY SAND with minor amounts of coarser SAND and small GRAVEL	1511
				wm -11			-	1.8		CONTINUED ON NEXT PAGE	

BORING NO .:

N-1

OF

JOB NO.: 2002-054
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26

EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505 feet

		≿ 3	2	ZE,	ci.		1_	TAN-	8-		
TIME	RATE, FT/MIN	TEMPORAF WELL	BLOWS (COUNT/F	SAMPLE SIZE, INCHES	SAMPLE NO	DEPTH IN	ELEVATION	MATERIAL SYMBOL	USCS/GEDLOGI FORMATION	DESCRIPTION	COMMENTS
	1.43	ų.				50		13	SM	same as above.	The state of the s
	AL PR			3 38/1			-	NAME OF THE PERSON NAME OF THE P			
	DOT T				10			1			
		3	8	Grob		55		10			
						1	-			(55") - less SILT than above:	
								NEW YEAR			
10:18		1 1		Grab				200			
10:27				Oldo		60		T CONT			
			100					100			
			1	1 100		102		255			
				Grab		65	+	1		(er)	
						. -		18		(65') - more SANB, less SILT than above.	
								NAME			
	1.43			Grab				Hilessinken Men sesten bilessinken som en sesten sinken som			
	1.43				-10	70		VERN		(70") - abundant GRAVEL	
			Total		-	- 1	-	5775	1		
			Tie (NOT !	UV			1000			
			Little	Grob		75	+	40.00	1 8	(75*) - less CRAVEL than above.	
								1693		(73) - less chavel than above.	
			200			-	-	62.02			
0:41				Grab		80		25.00			
0:50						00	T	199			
								機	GW	Dark grayish brown (10YR 4/2), poorly sorted,	
			× 00							subrounded SANDY GRAVEL with fine to coarse	
				Grab		85	+			SAND and minor SILT.	
								1			
							-	1	CM	Could be Hown Elec	
	0.74			Grob		00				Grayish brown (10YR 5/2), poorly sorted, very fine to coarse SAND with trace amounts of	
	0,71		1			90				SILT and GRAVEL	
			3435		III	W		200	GP	Light grayish brown (10YR 6/2), moderately	
			de	AR	nisi			3		well sorted, angular to subrounded SANDY	
	-			Grab		95	+	-		GRAVEL with very fine to fine SILTY SAND and minor medium and coarse SAND.	
								1		WW. 2007 CO. C.	
	- 3		GNS	18 -	1				SW	Grayish brown (10YR 5/2), poorly sorted,	
1:17				Grob		-	-	1000		angular to subraunded, fine to very coarse SAND with trace amounts of SILT and GRAVEL	
1:26				0.00		100				THE STATE OF	
								1 67			
			1111							CONTINUED ON NEXT PAGE	

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JOB NO.: 2002-054
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26

EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 50.5

0.95		TEMPORARY WELL WELL CONGURATION		SAMPLE SIZE ROHES ROHES		105		MATERIAL	SW	same as above. Brown (10YR 4/3), poorly sarted, very fine to	
9:9:	95		4-0			105		STATE OF	SM	Brown (10YR 4/3), poorly sorted, very fine to	
9.95	95			Grab		1 1 1		200000000000000000000000000000000000000		coarse, micaceous SILTY SAND with minor amounts of subangular GRAVEL.	
						110		NATES DESCRIPTION		(110') - more SILT and CLAY than above.	- 04E/I
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Grab		115			ML	Brown (10YR 4/3), micaceous SANDY SILT with minor amounts of fine to coarse SAND and trace amounts of CLAY.	
1:47				Grab				ZOTZETOSKUOT	SM	Brown (10YR 4/3), poorly sorted, very fine to coarse, micaceous SILTY SAND with mirror GRAVEL	
3:05			101			120		WINDS TOWN			
				Grob		125		Tana Market			
1.25	5			Grab	St.	130			SW	Brown to dark yellowish brown (10YR 4/3 to 4/4), poorly sorted, very line to coarse SAND with trace amounts of SILT and GRAVEL.	
				Grab		135		9500000000000	SM	Dark grayish brown (10YR 4/2), poorly sorted, fine to coorse SILTY SAND with minor GRAVEL.	
					- Calle			100	SW	Brown (10YR 4/3), poorly sorted, very fine to coarse SAND with trace amounts of SRT and	
3:21 3:29	1			Grab		140	1			GRAVEL.	
				Grab		145	1			(145') - color change to dark grayish brown	
1.82	2			Grab		150		Strengt thensy	SM	(10YR 4/2). Brown (10YR 4/3), moderately sorted, very fine to fine SILTY SAND with minor medium and coarse SAND and GRAVEL	91
								1 64			

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JOB NO.: 2002-054 SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26

EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505 feet

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN FEET	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
	1.82					150		2001000	SM	same as above.	
		100		Grab		155		154	SW	Brown (10YR 5/3), poorly sorted, angular to subrounded, very fine to coarse SAND with minor SILT, GRAVEL and COBBLES.	
13:40 13:49				Grab		160					
			vel ve	Grab		165		ACCOUNT OF TAXABLE	SM	Dork yellowish brown (10YR 4/4), poorly sorted, fine to coarse SILTY SAND with abundant angular to subangular GRAVEL and trace amounts of CLAY.	
	1.25			Grab		170		STREETS STREETS	The second	AL CONTRACTOR	
				Grab		175		I A		Brown to dark yellowish brown (10YR 4/3 to 4/4), poorly sorted, angular to subrounded, very fine to very coarse SAND with minor SILT and trace amounts of GRAVEL.	
4:05 4:15		I I		Grab		180				(180') – more GRAVEL than above.	
			100	Grab		185				Granitic and schistose GRAVEL, COBBLES, and BOULDERS interbedded with brown (10YR 4/3), fine to medium SILTY SAND and trace amounts of CLAY.	
	0.67		o Tac	Grob		190	100				
			a Ale		= 1	195	1 10 10 10	100 A			
4:45 5:30 5:44	0.14		5.	Grab	Acutor Story Symmoly	200	-				
6:12		LIDI			1000		- 2	200		CONTINUED ON NEXT PAGE	stremely hard drilling.

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SITE LOCATION: DRILLING METHOD: CONTRACTOR:

JOB NO.: 2002-054 TE LOCATION: MID-VALLEY SANITARY LANDFILL
ING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1575.52 feet NORTHING: 1875.630.26

EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
15:30	0.14					200		300	GW	same as above.	
5:44 6:12											Extremely hard drilling.
	0.19			Grab		205					
6:38			118			200				(206") - 2-foot thick lens with more	
52 _{17.14} /07 9:25 9:35	0.05									COBBLES and BOULDERS than above.	
9:25 9:35 5:05	0.20			Grab		210	1	e-196			
3.03								0.7			
				Grab		215	+	4			
v.	0.43		40						33		
	nacina L			Comb			-	2.7			Driller misting water to improve cultings return
				Grab		220	+			(220') - unit is fining with depth, less	manufacturings return
										GRAVEL and COBBLES than above.	
5:40				Grab		205					
5:50						225					
									SW	Yellowish brown (10YR 5/4), poorly sorted,	
				Grab		230	1		511	very fine to coarse SAND with SILT and GRAVEL.	
										ONACL	
	1.43			Grab		235	+			(234') - less SILT than above.	
									SM	Yellowish brown (10YR 5/4), moderately sorted,	
				Grab		240	+	A THE STREET		very line to fine SILTY SAND with trace amounts of medium and coarse SAND.	
				moon)					SP	Yellowish brown (10YR 5/4), well sorted, fine	
6:04				Cenh					142,731	SAND with trace amounts of medium and coarse SAND.	
5:14				Grab		245			Dire		124
9								4.15.45		Yellawish brown (10YR 5/4), poorly sorted, angular to subongular SANDY GRAVEL with	
				Grob				4, 6, 4 X, 1, 1, 2, 3, 4		medium to coarse SAND and minor COBBLES,	*
				5.00		250		4 1			Driller misting water to improve cuttings return.
22	1.43			- 6				3		CONTINUED ON NEXT PAGE	improve connigs return.

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JOB NO.: 2002-054
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26 EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505 feet

TIME	rate, ft/min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.	SAMPLE SIZE, INCHES	SAMPLE NO.	N HTG30	j	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGY FORMATION	DESCRIPTION	COMMENTS
						250			表 (A)	GW	same as above.	Driller misting water to
	1.43								1. XX		(252') - unit fining with depth, fewer COBBLES than above.	improve cuttings return
				Grab		255-					Dark yellowish brown to yellowish brown (10YR 4/4 to 5/4), poorly sorted, angular to subangular, very fine to coarse, orkosic SANO with minor SILT and GRAVEL.	10 10 10 10 10 10 10 10 10 10 10 10 10 1
				Grab		260						1 my 11
6:28 6:35				Grab		265						
55				Grob		270					(267') — abundant GRAVEL with COBBLES.	uv.
						270						
	1.67			Grab		275						
			Berg	Grob	1	280				i	(278') — less GRAVEL and lewer COBBLES than above.	
6:47 6:58				Grob .	test	285		200000000000000000000000000000000000000			E Las de la	
		Taese		Grab		290		20000000		N		
				01	Y I						.(291') - more GRAVEL and COBBLES than bove.	
	1.54		- I	Grab		295		SOCIETY OF STREET				
				Grab	1	300		100 miles				

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GW DEPTH: Variable TOTAL DEPTH: 505

JOB NO.: 2002-054

SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26 EASTING: 6739915.01

	120000	NAME OF STREET	Contract of	GAN, CHG		-		-			
пме	RATE, FT/MIN	TEMPORARY WELL CORGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
						300			SW	same as above.	
7:11 8:07				Grob	III CI	305				(304°) — sand predominantly is line to medium, little to no coarse SAND.	
				Grab		310				(310') — sand becomes fine to coarse, abundant COBBLES.	
	2.22			Grab		315-		T [S]	SM	Reddish brown (5YR 4/4), very fine to fine	
				Grob		320		SECTION		SILTY SAND with minor amounts at medium and coarse SAND and GRAVEL(320') — more medium and coarse SAND than above.	
18:16 18:24				Grob		325		SHAMMAN			
27		Grab	330		1 13	SW	Yellowish brown (10YR 5/4), poorly sorted, fine to coarse SAND with minor amounts of SILT and GRAVEL	ail			
	2.50			Grab		335-					
		tion of	Jacob Jacob Jacob Jacob Jacob	Grob		340-				(340') — more GRAVEL/COBBLES and less SANO than above.	
18:32 18:40	2			Grab	Jan Nei	345-				(346') – more coarse SAND than above.	
				Grob		350-					
	2.86	5	- N. D	WI IE						CONTINUED ON NEXT PAGE	

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JOB NO.: 2002-054

SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26 EASTING: 6739915.01

CONTINUED ON NEXT PAGE

GW DEPTH: Variable TOTAL DEPTH: 505 feet

1.67 Grab 375 Grab 375 Grab 375 Grab 380 SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, fine to coarse, arkosic GRAVELLY SAND with abundant COBBLES and minor amounts of SILT. (382') — more SILT than above. SM Brown to dark yellowish brown (10YR 4/3 to 4/4), poorly sorted, fine to coarse SILTY SAND with abundant GRAVEL and COBBLES. No water detected boring. SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, fine to coarse, arkosic GRAVELLY SAND with abundant GRAVEL and COBBLES. SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, fine to coarse, arkosic GRAVELLY SAND with abundant COBBLES and minor amounts of SILT. SW Yellowish brown (10YR 5/4), poorly sorted, minor amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, minor amounts of SILT.	TIME	RATE, FT/MIN	TEMPORARY WELL	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN FEET	ELEVATION IN FEET	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
Grob 360 360 370 365 365 366 366 370 365 366 366 366 366 366 366 366 366 366							350			SW	some as above.	
Grob 360 365 366 366 366 366 366 366 366 366 366		2.86		EL 19	Grab		355		6	\	well sorted, very fine SANDY SILT with minor	
385 2.50 Grab 370 Grab 375 Grab 375 Grab 376 Grab 377 Grab 377 Grab 388 Grab 389 Grab 389 Grab 389 Grab 389 Grab 389 Grab 380 Grab Grab					Grob		360		Walter States of the States of	SM	Yellowish brown (10YR 5/4), poorly sorted	
375 376 377 378 379 379 379 379 379 379					Grab		365		94755754Ve			53.0
8.57 Grab 375 Grab 375 SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, fine to coarse, arkosic GRAVELLY SAND with abundant COBBLES and minor amounts of SILT. (382) — more SILT than above. SM Yellowish brown (10YR 4/3 to 4/4), poorly sorted, fine to coarse, arkosic GRAVELLY SAND with abundant GRAVEL and COBBLES. No water detected boring. SW Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, arkosic GRAVELLY SAND with abundant GRAVEL and COBBLES and minor amounts of SILT. SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, fine to coarse, arkosic GRAVELLY SAND with abundant COBBLES and minor amounts of SILT. SW Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, arkosic GRAVELLY SAND with abundant COBBLES and minor amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, micocoaus SILTY SAND with GRAVEL, minor COBBLES and trace amounts of soil sample N1-1D.		2.50		au s	Grab		370		Service Strategisters		(370') - little to no coarse SAND or GRAVEL	No water detected in
380 380 380 380 380 380 380 380	/08				Grab		375		die New Johnston		(374') — unit is coarsening with depth, more medium and coarse SAND than above.	boring
SM Brown to dark yellowish brown (10YR 4/3 to 4/4), poorly sorted, fine to coarse SILTY SAND with abundant GRAVEL and COBBLES. No water detected boring. SW Yellowish brown (10YR 5/4), poorly sorted, angulor to subangular, fine to coarse, arkosic GRAVELLY SAND with obundant COBBLES and minar amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, arkosic GRAVELLY SAND with obundant COBBLES and minar amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, microceous SILTY SAND with GRAVEL, minor COBBLES and trace amounts of soil sample NI-1D.		1.67		100	Grob		380		S		angular to subangular, fine to coarse, arkosic CRAVELLY SAND with abundant COBBLES and minor amounts of SILT.	Dry cuttings
SW Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, line to coarse, arkasic GRAVELLY SAND with abundant COBBLES and minar amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, micoceous SILTY SAND with GRAVEL, minor COBBLES and trace amounts of soil sample N1-1D.	:38				Grab		385		Na real and a second second	iM E	Brown to dark yellowish brown (10YR 4/3 to 4/4), poorly sorted, line to coarse SILTY SAND	No water detected in baring.
minor amounts of SILT. SM Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, micoceaus SILTY SAND with GRAVEL, minor COBBLES and trace amounts of soil sample N1-1D.		1.43			Grab		390			W	rellowish brown (10YR 5/4), poorly sorted, ingular to subangular, line to coarse arkasic	Maist cuttings.
Crob	39				Grob 2.5 N	1-10	395	-	SI	M Y	rinar amounts of SILT. (ellowish brown (10YR 5/4), poorly sorted, ine to coarse, micoceous SILTY SAND with RAVEL, minor COBBLES and trace amounts of	(395*) – obtain downhale soil sample N1-1D.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		2.00			Grab	4	100	-				

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JOB NO.: SITE LOCATION: DRILLING METHOD: CONTRACTOR:

JOB NO.: 2002-054
TE LOCATION: MID-VALLEY SANITARY LANDFILL
ING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02
DATE FINISHED: 8/12/02
ELEVATION: 1570.52 feet
NORTHING: 1875630.26 EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	111	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
						400				SM	same as above.	
12:29 12:35									No.			E & 0208
	1.00			Grab		405				SC	Dark yellowish brown (10YR 4/6), poorly	Air off at 12:33.
12:38 13:27		LE SAMPLE				103		90			sorted, subangular to subrounded, fine to coarse CLAYEY SAND with rounded GRAVEL up to 1 inch in diameter and abundant fine SAND.	Air off at 12:40. No water detected in bor at 13:15.
-	0.75	BOREHOLE		Grab		410				CL	Brown (7.5YR 4/4), moderately sorted SANDY CLAY with subangular fine and medium SAND.	
13:35 13:52		OPEN 808		-	7/=	710		y lat Y 2nd			es and seeming the tro medium sand.	Damp cuttings returned, but no free water. No free water.
	1.33	(NI-1		Grob		415			////	SW	Dark yellowish brown (10YR 4/4), poorly sorted, fine to coarse GRAVELLY SAND with rounded GRAVEL up to 3 inches in diameter and minor SILT.	Damp cultings returned a
13:58 8/09 7:29				Grab		420						First SWL=411.90' bgs at 15:10. (420') — obtain a soil sample N1-20.
	3.33			Grab 2.5	N1-2D	425						
7:32 8:08				Grab		430			WASTERNIA TEN	SM	Yellowish brown (10YR 5/4), poorly sorted, fine to coarse, micaceous SILTY SAND with minor CLAY and GRAVEL.	
		N1-2		Grab		435			STANGER STANGE			10-11 12-1-
	2.22			Grab		440			STORIGOTOPIC			14.0 24.0
										GW/ SW	Yellowish brown (10YR 5/4), poorly sorted, angular to subangular, granitic and schistosic	
				Grab		445			100		CRAVELLY SAND to SANDY GRAVEL with minor SILT and COBBLES.	Second SWL=412,50' bgs at 9:53.
8:17 9/12				Grab 2.5	N1-2	450-			**************************************			15.01
8:09	n,è										CONTINUED ON NEXT PAGE	

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JOB NO.: 2002-054
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02
DATE FINISHED: 8/12/02
ELEVATION: 1570.52 feet
NORTHING: 1875630.26

EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505 feet

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	100	IN FEET MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
8/12 8:09				2.5	N1-2	450		1	GW/ SW	same as above	
81 1	The I	4	E mile	Grob		455		2 2 2 2 2		(455') - abundant COBBLES.	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	1.11			Grob		460				(460') - Tewer COBBLES than above.	
				Grab	miri	465		2,47			
27				Grab				Wichard Control	SM/ ML	Yellowish brown (10YR 5/4), poorly sorted, fine to coarse SILTY SAND to SANDY SILT with minor CLAY, coarse SAND and GRAVEL	
52	LUCA !			2730		470		CHETTEN CO.			0.00
				Grab		475		NEW SAVES			Little to no free water o cuttings returned. Driller misting water to
	2.14		G S	Grab		480		ATTENDATION OF		(477°) – more SILT and CLAY than above.	improve cuttings return.
59				Grob		485		NAMES AND POST OF		(482') — less fines than above.	
59	1.00			0				Master Carlo			
16		и1−3 ^		Grab		190		TENTESTER TO			
014	1.67		en ille	Grob	4	195	3n	TANKER TANKER			la l
22				Grab	5	500		8 51		(497') - 12-inch lens with obundant SAND and GRAVEL.	
7								PTENTANTA		CONTINUED ON NEXT DACE	Third SWL=495.5' bgs at 16:15, in the aquitord.

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JOB NO.: 2002-054
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. FINEGAN, CHG

DATE STARTED: 8/06/02 DATE FINISHED: 8/12/02 ELEVATION: 1570.52 feet NORTHING: 1875630.26 EASTING: 6739915.01

GW DEPTH: Variable TOTAL DEPTH: 505

TIME	rate, ft/min	TEMPORARY WELL COFICURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION	MATERIAL	USCS/OEDLOGIC FORMATION	DESCRIPTION	COMMENTS
11:40	1,00			2.5	N1-3	500		Wile Supple	SM/ ML	some as above.	Third SWL=495.5' bgs a 16:15, in the aquitord.
1:45				Grab		505				\	
Marine 200 - 2000-2000						510				Notes: Total depth of baring 505 feet. Groundwater first encountered at 415' below ground surface (bgs), static recovery measured at 411.90' bgs. Second (confined) groundwater encountered.	
						515		-		at 442' bgs, static recovery measured at 412.50' bgs. 4. Third (confined) groundwater encountered in aquitard at bottom of boring, static	
						500				recovery measured at 495.5' bgs. 5. 2-inch piezometer installed in boring, screened from 496' to 501' bgs. 6. 4-inch monitoring well installed in boring,	
						520				screened from 395' to 425' bgs.	
						525					
						530					
						535					
						540					
						545					
						550	-				

BORING NO .:

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PAGE: 1 OF 11

JOB NO.: SITE LOCATION:

2002-092

DATE STARTED: DATE FINISHED: ELEVATION:

5/12/03 5/23/03 1539.00 feet 1874309.93 NORTHING: EASTING:

6740360.51

GW DEPTH: Variable TOTAL DEPTH: 545 feet

TE LOCATION: MID-VALLEY SANITARY LANDFILL
LING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE DRILLING METHOD: CONTRACTOR:

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION BLOWS	(COUNT/FT.)	NOHES INCHES	SAMPLE NO.	NI HIA	TEE.	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
16:35				Grab		5				GM	FILL: Very dark grayish brown to dark olive brown (2.5Y 3/2 to 3/3), fine to medium, moderately sorted SILTY GRAVEL with schistose and granitic GRAVEL	11-3/4" drive casing, 10-5/8" tri-cone button bit.
	0.57		C	Grab	14	10				GW	ALLUMUM: Olive brown (2.5Y 4/3 to 4/4), fine to coarse, poorly sorted SANDY GRAVEL with occasional schistose and igneous COBBLES and abundant fine to coarse arkosic SAND.	
			G	irab		15-		-			(12'-16') - decreasing amounts of fine SAND.	
7:10 5/13 7:58			G	rab		20-		-				HG E
			G	rob		25-					Olive (5Y 4/3 to 4/4), fine to medium, poorly sorted, subangular CRAVELLY SAND with abundant schistase and igneous GRAVEL and QUARTZ to arkosic SAND.	
	0.43		G	rab		30-					(29') — more GRAVEL than above.	
			Gr	rob		35		The state of the s			Olive gray to olive (5Y 4/2 to 4/3), poorly sorted, medium to coorse SANDY GRAVEL with minor coarse SAND and scattered COBBLES, abundant rock flour and small fragments of arger COBBLES.	(31') - misled woter.
:45				ob		40		Car Car Car Car			(41") - small lens of fine to medium SANO,	ting to
			Gr	ob	enter (45	7.	Series Series	34343	-	ninor COARSE SAND.	
	0.29		Gri	ab		50		からまるのを 300m	ACCOUNT.	s	.(49'-51') - olive (5Y 4/3 to 4/4), poorly orted, fine to coarse, subrounded SAND lens.	
					11	-	_	-	My.	9 3	CONTINUED ON NEXT PAGE	

BORING NO .:

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PAGE: 2 OF 11

GW DEPTH: Variable TOTAL DEPTH: 545 '

JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.00 feet

NORTHING:	1874309.93
FASTING:	6740360.51

		> Z	?	14	~	186	-		100	8_		
TIME	RATE, FT/MIN	TEMPORAR WELL COFIGURATIO	BLOWS (COUNT/FT.	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	1	ELEVATION IN FEET	MATERIAL	USCS/GEOLOG FORMATION	DESCRIPTION	COMMENTS
	0.29					50			366	GW	same as above.	
	100											10000
		1 6		Grab				3				
						55-					M = 0	
											(56'-60') - lorger GRAVEL and abundant COBBLES.	(56'-60') - rig jumpy.
			-	-6							GOBBLES.	
10:23		l last		Grab		60						
10:45			- 12			00						120
										SW	Dark yellowish brown to olive brown (10YR to	
			100								2.5Y 4/4), poorly sorted, fine to coorse,	
				Grab		65-					subrounded GRAVELLY SAND with abundant small igneous and metamorphic GRAVEL and	
											scottered COBBLES.	
				Grab						1		
	0.24			Gido		70-		Ť.				100
								1				122
		13	4 30	Grab		75			100			
					T-MI	75-					4-40	
									V.,	GW	(76') - increasing COBBLES and GRAVEL.	
										un	Dark yellowish brown (10YR 4/4), poorly sorted, small to large SANDY GRAVEL with	
12:08				Grob		80					abundant COBBLES and varying amounts of fine to coarse SAND.	
13:45						2000					Time to course SAMU.	0.0
		- 8		St.		11.00						
				0.71								
				Grab		85-		- 10		4		
								1				
				Grab					翻			
	0.67			Grub		90-		-			(90') - more medium SAND than above,	1931
											fewer large GRAVEL clasts.	
			M. In		-0.7		guir			SW	Dark yellowish brown (10YR 4/4 to 4/6).	
	72			Grab				THE S			poorly sorted, fine to coarse, subangular GRAVELLY SAND with occasional subrounded,	
				5555		95-					metamorphic and igneous GRAVEL and small	
	= 1							1 3			mineral fragments.	
4:15				Grob								
4:24				III Y	CVI	100	ė I			121		1000
							-				CONTINUED ON NEXT PAGE	

BORING NO .:

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PAGE: 3 OF 11

JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

GW DEPTH: Variable TOTAL DEPTH: 545 feet

DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.09 feet NORTHING: 1874309.93 EASTING: 6740360.51

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	SYMBOL USCS/GEOLOGIC	FORMATION	DESCRIPTION	c	OMMENTS
4:24	N					100			W	same as above.		
				Grab		105				(105') - more coarse SANO and GRAVEL than above.		
	0,71			Grab		110				(110*) - fewer COBBLE fragments than above		
				Grob		115						
4:52 5:08				Grab		120	-			(120') — large COBBLE fragments and GRAVEL more abundant.		
				Grab		125	-					
	0.54			Grab		130		GW GW	F	right alive brown (2.5Y 5/4), poorly sorted, ine to coarse SANDY GRAVEL with abundant PEBBLE GRAVEL, very COARSE SAND and few scottered COBBLES.		83-
				Grab		135	-	19X139X139X	le	.(135') — predominantly fine to medium SAND		
i:45 i:02				Grab		40		K2129K219KC	S	.(140') — obundant very COARSE SAND and mall GRAVEL, traces of SILT at end of run.		
			3-	Grab	1	45-	150	W 1048	11	(145') – abundant coarse to medium SAND. ght olive brown (2.5Y 5/4), poorly sorted,		
	0.47			Grab	1	50-			fi	th lenses of GRAVEL		

BORING NO .:

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JOB NO.: 2002-092 SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE DATE STARTED: DATE FINISHED: ELEVATION:

GW DEPTH: Variable TOTAL DEPTH: 545

E STARTED: 5/12/03 EFINISHED: 5/23/03 ELEVATION: 1539.00 feet NORTHING: 1874309.93 EASTING: 6740360.51

TIME	RATE, FT/MIN	TEMPORARY WELL CORGURATION	BLOWS (COUNT/FT	SAMPLE SIZE INCHES	SAMPLE NO.	DEPTH IN	IN FEET	SYMBOL USCS/GEOLOGI FORUATION	DESCRIPTION	COMMENTS
	0.47					150		SW	same as above.	TABLE
				Grob		155			(155') – more uniformly medium SAND.	
16:45 5/14 7:45				Grab		160		olinite-perioris	(160°) – more fines than above.	(160") - misting wate
				Grab		165				
	0.44			Grab		170			(168'-170') - minor fines, mostly medium to coorse SAND.	- <u>(10.81</u>
				Grab		175			(175') - some as above.	
8:30 8:47			SULP of 200	Grab		180	1		(178') - coarser grained, more GRAVEL, less SAND than above.	(178') – rig jumpy.
				Grab		185	45,8,4	GW- SW	Yellowish brown to dark yellowish brown (10YR 5/6 to 4/6), poorly sorted, fine to coarse, subangular SANDY GRAVEL to GRAVELLY SAND with fine to medium SAND and angular COBBLE and GRAVEL fragments.	
	0.44			Grab		190		A STATES AT		
			100	Grob		195		15×415×415×	(195') - more fine SAND than above.	(198') – harder drilling
9:32 9:40			048	Grab		200	1 2 2 2 2 2	GW GW	Light olive brown (2.5Y 5/4), poorly sorted fine to coarse SANDY GRAVEL with minor amounts of SAND and scattered COBBLES.	rig jumpy(200') — drilling open—hale.
9:32				Grab		200	1 20	CW CW	fine to coarse SANDY GRAVEL with minor	open-hale.

BORING NO .:

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LOGGED BY: E. WHITE

JOB NO.: 2002-092 SITE LOCATION: MID—VALLEY SANITARY LANDFILL DRILLING METHOD: AIR ROTARY CASING HAMMER CONTRACTOR: WDC EXPLORATION AND WELLS

DATE STARTED: 5/12/03

DATE FINISHED: 5/23/03

ELEVATION: 1539.00 feet

NORTHING: 1874309.93

EASTING: 6740360.51

GW DEPTH: Variable TOTAL DEPTH: 545 feet

			E. WHI	E							EASTING: 6740360.51	
TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	į	ELEVATION IN FEET	MATERIAL	USCS/GEDLOGIC FORMATION	DESCRIPTION	COMMENTS
9:40			Vo	Grab	-	200			5 to 6 to 6 to		(200'-235') - predominantly COBBLES and GRAVEL with minor fine SAND.	(200') – drilling open-hole.
	0.67			Grob		210						
				Grab		215		-				(215'-235') - poor cuttings return
0:10 0:14				Grab	- /-	220		-	1000			Nati
	0.25			Grab		225-		- 2	3,42,543.54 3,44,54,43.54			
	0.23			Grab		230		-	45.04.05.00			00 m
1:15 5/15 3:20				Grab		235-		-	4.4			(234') - telescope with 9-5/8" drive cosing.
	0.40		deal (Grab		240					(240°) — abundant GRAVEL and COBBLE fragments.	es n
8:40 9:13				Grab		245					(243') — more line to medium SAND than above.	
	0.69		,044) ELDE			250		-			CONTINUED ON NEXT PAGE	DENI Ja

BORING NO .:

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JOB NO.: 2002-092

SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

DATE STARTED: DATE FINISHED:

E STARTED: 5/12/03 E FINISHED: 5/23/03 ELEVATION: 1539.00 feet

GW DEPTH: Variable TOTAL DEPTH: 545

NORTHING: 1874309.93 EASTING: 6740360,51

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	(COUNT/FT.	SAMPLE SIZE INCHES	SAMPLE NO.	OEPTH IN	ELEVATION IN FEFT	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
						250		100	GW	same as above.	
	0.69					255			SW	Dark yellowish brown (10YR 4/4), poorly sorted, fine to coarse, subrounded GRAVELLY SAND with small, subangular GRAVEL.	
e de la constante de la consta				Grab		260					
9:42 9:53				Grab		265				(265') — more fine SAND than above, some SILT.	
				Grab		270-	-			(270') - more medium SAND and large GRAVEL than above.	
	0.74			Grob		275				(275'-280') - less medium SAND, more fine SAND than above, minor SILT.	
0:20				Grab		280					
0:34	- pa	51 2-19		Grab		285				(285') — abundant coarse SAND and small to medium GRAVEL.	
	0.03		10	Greb		290			- 1	(290'-295') - little medium SAND, obundant fine SAND and PEBBLE GRAVEL, some COBBLE fragments.	
	0.83		rick.	Grab		295				The second	
0:58				Grab		300				(300") — abundant fine to medium SAND, lew GRAVEL clasts.	

BORING NO .:

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DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.00 feet NORTHING: 1874309.93 EASTING: 6740360.51

GW DEPTH: Variable TOTAL DEPTH: 545 feet

JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

							EASTING: 6740360.51					
NME R/	ATE, /MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS	
						300	1		SW	(300') - abundant fine to medium SAND,		
0:58										few GRAVEL closts.		
1:05				Grab							Train 1	
			20.2%			305				(305'-310') — abundant fine SAND, minor SILT, minor PEBBLE GRAVEL		
			-	Grob		310						
0.	.67			Grab		315		15,14,195	GW	Light olive brown to alive brown (2.5Y 5/3 to 4/3), poorly sorted, fine to coarse, subangular SANDY GRAVEL with abundant coarse SAND and PEBBLE GRAVEL and tabular schistose COBBLE		
							1			fragments.		
				Grob								
				Grug		320	+					
:35			100				1					
2.55				Grab		325	25					
						0.0	1					
								,	SW	Dark yellowish brown (10YR 4/4 to 4/6), moderately sorted, fine to medium GRAVELLY		
				Grab		330	- 1		SM D	SAND with minor SILT and trace PEBBLE GRAVEL		
								100.00		Dark yellowish brown (10YR 4/4 to 4/6), moderately sorted, very fine to fine SILTY SAND with trace CLAY and minor fine to medium SAND. (334') — minor CLAY, abundant fines.		
0.8	85			Grab				1000			318	
						335		Series .				
								SAMO				
			-	Grob		340		27.657.10		(340'-345') - less CLAY, more SILT and fine SAND than above.		
										Dork yellowish brown (10YR 4/6), moderately sorted, fine to medium GRAVELLY SAND with		
5:25				Grab 2.5 N	N6D-1 345	345	-		f	minor SILT and trace PEBBLE GRAVEL.	(345') - collect	
			MENO)	HOAT		550000			undi	(343) — collect ndisturbed soil sample 6D-1 at 14:25.		
		1		Grab			200		13		100-1 of 14.23.	
7	199		-9-1	Orgo	0007	350						
0.7	7	12	(30)	100	willed.		8			CONTINUED ON NEXT PACE		

BORING NO .:

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JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

GW DEPTH: Variable TOTAL DEPTH: 545

DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.00 feet NORTHING: 1874309.93 EASTING: 6740360.51

	LOGG	ED BY:	E. WHI	E						EASTING: 6740360.51	
TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN FEET	FI EVATION	IN FEET	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
					AT THE	350	Ŧ		SW	some as above.	
										* -	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	0.77			Grab		355	1				30.00
				45.7						(355') — less SILT than above, more fine to medium SAND.	
							-				
				Grob		360	+			(360') - slightly more PEBBLE GRAVEL than	
										above(358'-367') - color change, more fine to	
5:49			The l	Grab						medium SAND than above.	
5/16 8:08		1		- minimum transfer	N6D-2	365		100			(365') - collect undisturbed soil sample N60-2 at 16:45.
				Grab							
						370	T			(370') - slightly more SILT than above.	
				Cont				APR. 10.000		(372'-385') - increase in PEBBLE GRAVEL and coarse SAND.	
	1.18			Grab		375	t				(375') - rig bouncing.
								100			
				Grab		380-					
			11			-					
			- 10			-	-				
8:25 8:35			-	Grob		385	+				62.0
				Grab						* =	
				Grab		390	+			10 - 100	
						1100		100			
	0.40		er (Grab		TOE					P 1000
	0.40					395				(395') — few GRAVEL clasts. (390'-400') — decreasing coarse fraction.	188
					1.5				-		
				Grab		400	1			(100° 100°)	7.00
						12				(400'-405') - fewer PEBBLE GRAVEL, slight SILT increase.	(400") - cuttings dry, dusty.
										CONTINUED ON NEXT PAGE	

BORING NO .:

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DATE STARTED: DATE FINISHED: ELEVATION:

E STARTED: 5/12/03 E FINISHED: 5/23/03 ELEVATION: 1539.00 feet NORTHING: 1874309.93 EASTING: 6740360.51

GW DEPTH: Variable TOTAL DEPTH: 545 feet

JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

TIME	rate, ft/min	TEMPORARY WELL	BLOWS (COUNT/FT.)	SAMPLE SIZE INCHES	SAMPLE NO.	DEPTH IN	FEET	IN FEET MATERIAL	USCS/GEOLOGIC	DESCRIPTION	COMMENTS
						400			SW	(400'-405') - fewer PEBBLE CRAVEL, slight SILT increase.	(400') - cuttings dry, dusty.
9:25 10:58				Grab		405					ur -
		N6-	1	Grab		410	Ist		SM- ML	Dark yellowish brown to yellowish brown (10YR 4/6 to 5/6), well sorted, fine SILTY SAND to SANDY SILT.	(405'-425') - no wate during drilling. (410') - collected wate
	0.91	14		Grab		415	24	d	SW	Dark yellowish brown to yellowish brown (10YR 4/4 to 5/4), fine to coarse, poorly sorted, subangular GRAVELLY SAND with trace SILT and minor PEBBLE GRAVEL.	sample N6-1 from open hole at 14:15. First SWL=410.50° bgs.
				Grab		420-					
1:20				Grab		425			ML	Dark yellowish brown (10YR 4/4 to 4/60), well sorted, fine SANDY SILT.	
		N6-2		Grab		430			św	Dark yellowish brown (10YR 4/4), poorly sorted, fine to coarse, subangular GRAVELLY SAND with minor PEBBLE GRAVEL	(428') - collect water sample N6-2 from temporary well at 12:20 Second SWL=410.85' bgs.
The last	1.82			Grab		435		Windship Control	SM- SC	Light olive brown (2.5Y 5/4), poorly sorted, fine to coarse SILTY SAND to CLAYEY SAND with trace PEBBLE GRAVEL and abundant fines.	(435') – cuttings saturated.
				Grob		440		高祖和秦祖和秦祖	GW GW	Light olive brown (2/5Y 5/4), poorly sorted, medium to very coarse, subangular SANDY GRAVEL with abundant PEBBLE GRAVEL and minor amounts of medium to coarse SAND.	(440') - collect water sample N6-3 from temporary 410.60'
6:03 /20 5:49	(6	N6-3		Grab		445		Mark Mark	SKII DAK		Third SWL=410.50' bgs or 5/20/03.
	1.43			Grab	,180	450		26.5 C. C. C.	7X 5 457 X 1 4 5	(450') - GRAVEL less abundant, more coorse	(447*) – abundant free water.
			or had	10.0					200	SAND. CONTINUED ON NEXT PAGE	

BORING NO .:

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JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANDFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

GW DEPTH: Variable TOTAL DEPTH: 545

DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.09 feet NORTHING: 1874309.93 EASTING: 6740360.51

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	FEE	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
				-	-	450		-	30%	GW	(450') - GRAVEL less abundant, more coarse	
	Looi		= 10								SAND,	
							-		0.00			
	1.43			Grab		455					(455') - trace CLAY.	
	11.53.58	0.10				100	-		16	SC	Strong brown (7.5YR 5/6), tine to medium, moderately sorted CLAYEY SAND with abundant	(1677)
									192	1	SILT.	(457') - eosier drilling.
				Cont					150			
				Grab		460		-				
	10.4							200	1			
						al e	-	1 2	30			
6:03		w		Grab		465				GW	Yellowish brown (10YR 5/4 to 5/6), poorly	
5/22 7:50		SAMPLE				100		4th			sorted, coarse SANDY GRAWEL with mior medium SAND, igneous and metamorphic	1 1 1
								Ā.			(some weathered) GRAVEL, few COBBLES and	
		BOREHOLE		Grab							trace CLAY.	
				Gido		470		-				(470') - collect w
	0.43	OPEN							13	SC	Strong brown (7.5YR 5/6), poorty sorted, fine to coarse CLAYEY SAND.	sample N6-4 from op-11 hole at 8:00.
	0.43	6		70 77					18 A		to course charer sand.	Fourth SWL=467.25' bgs of
		(N6-4)		Grab		475		_	12	CIT		5/22/03.
		1				11.00-0			CEAN CO.	2W	Dark yellowish brown (10YR 4/4), fine to coarse, poorly sorted SILTY SAND with	
				1 20					No.		occasional coarse SANDY lens and trace GRAVEL	
8:25	100					100			27.60	4	GIOWEL	
0:03						480-		-	1997			
	0.29						\vdash		577.0			
									2002			
0:20				Grab		485-		-	9776	13	(40°C) 4070	functions in
41.07	-13/		-	1-21					Year		(485'-497') - coarser lens with decreased SILT and more COARSE SAND than above,	(485'500') - mist water.
									N. P.		Irace GRAVEL.	
			Sales -	Grab					20,000			
		2				490-		-	SAMPLES CAND			
		(a)		- 8		0 1			FARE			
		ped i							100			
	0.54			Grob		495		_	1			
						3334			27.65		(495"-500") - loss of GRAVEL and COARSE SAND, more fines than above.	(495') - little free water
									100			
		64		Grob					W.Es			
				Grub,	TR	500-		-	100		(500') - increase in SILT, minor CLAY,	
				43.00							decreasing COARSE SAND and minor GRAVEL.	
									154	-10	CONTINUED ON NEXT PAGE	

BORING NO .:

N-6

PAGE: 11 OF 11

JOB NO.: 2002-092
SITE LOCATION: MID-VALLEY SANITARY LANOFILL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: E. WHITE

DATE STARTED: 5/12/03 DATE FINISHED: 5/23/03 ELEVATION: 1539.00 feet NORTHING: 1874309.93 EASTING: 6740360.51

GW DEPTH: Variable TOTAL DEPTH: 545 feet

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION BLOWS	(COUNT/FT.	INCHES	SAMPLE NO.	DEPTH IN	Ž	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
		Seal to 433				500			CANCEL STATE	SM	(500') — increase in SILT, minor CLAY, decreasing COARSE SAND and minor GRAVEL	
8:58 9:31			G	rob	100	505				SC	Strong brown (7.5Y 4/6 to 5/6), poorly sorted, fine to coarse CLAYEY SAND with abundant SILT and minor igneous and metamorphic GRAVEL.	/507/\
	0.83		G	rab		510						(507') - minor free water.
			G	rab		515		5th				_(512'-520') - poor cuttings return.
2						520						
						520					Yellowish brown to dark yellowish brown (10YR 5/4 to 4/4), fine to coarse, poorly sorted, subangular GRAVELLY SAND with weathered schistose GRAVEL, igneous GRAVEL and	
	2.00		Gr	rab		525		-			abundant COARSE SAND.	(525') – free water
			Gr	rab		530					(530') - more fine to medium SAND than above(535'-545') - scattered coarse CRAVEL	(530') - collect water sample N6-5 from temporary well at 15:00 Fifth SWL=514.0' bgs o 5/27/03.
		N6-5	Gr	ab		535					Notes: 1. Total depth of boring 545 feet. 2. Caving occured from 545' to 537'. 3. First groundwater measured at 410,50' below ground surface (bgs).	
			Gn	ab		540				11	 Second (confined) groundwater measured at 410.70' bgs and sampled in temporary well (427'-432'). Third (confined) groundwater measured at 410.85' bgs and sampled in temporary well (442'-445'). 	11.7
9:36			Gri	ab		-15		CONTRACTOR OF THE PERSON			 Fourth (confined) groundwater measured at 467.25' bgs and sampled in open barehole. Fifth (confined) groundwater measured at 	
						545					514' bgs and sampled in temporary well (524'-534'). 3. 2-inch piezometer installed in boring, screened from 524' to 534' bgs. Borehole caved in from 545' to 521' during piezometer construction. 3. 4-inch monitoring well installed in boring, screened from 427' to 432' bgs and from 412' to 422' bgs.	

GeoLogic Associates

MONITORING WELL COMPLETION SUMMARY

WELL NO .:

N-11

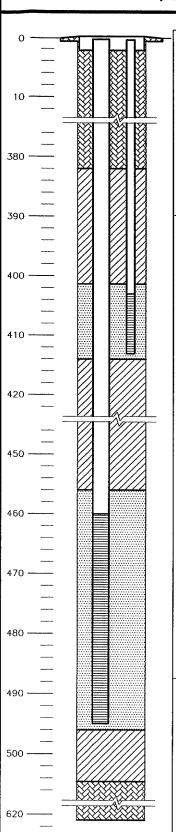
PAGE: 1 OF 1

JOB NO.: 2004-056
PROJECT: MID-VALLEY SANITARY LANDFILL PERCHLORATE INVESTIGATION

LOCATION: LINDEN AVENUE, NEAR MVSL

INSPECTOR: J. SAPP CHECKED BY: M. REASON, CHG

ELEVATION GROUND LEVEL: 1460.62' ELEVATION TOP OF CASING: 1460.35' (4"), 1460.26' (2") DATE STARTED: 4/26/04 DATE FINISHED: 5/13/04 TOTAL DEPTH: 495' (4"), 413 (2")



DRILLING SUMMARY:

Total Depth: 621 feet

Borehole diameter: 12" (0-200'), 10" (200'-621')

Driller: WDC EXPLORATION AND WELLS

Rig: SPEEDSTAR 30K

Bit(s): TRI-CONE BUTTON TOOTH

Drilling Fluid: AIR / MISTED WATER

Protective Casing: 11-3/4" DRIVE CASING TO 200',

9-5/8" DRIVE CASING TO 615'

WELL CONSTRUCTION DETAILS:

Casing: Virgin, factory-sealed, flush threaded, Schedule 80 PVC.

(4" # from 0.27 to 460 feet, 2" # from 0.36 to 403 feet.)

Screen: Virgin, factory-sealed, flush threaded, Schedule 80 PVC with

0.020-inch slots.

(4" # from 460 to 495 feet,

2" # from 403 to 413 feet.)

Filter Pack: Washed and graded,

commercial #3 Monterey-type sand.

(From 401.5 to 414 feet

and from 456 to 496 feet.)

Bentonite "Pure Gold" medium-sized Seal: chips by CETCO.

(From 382 to 401.5 feet, from 414 to 456 feet and from 496 to 504.5 feet.)

Grout Seal: Neat, type II/V Portland

cement grout with 4% bentonite by weight.

(From 0 to 382 feet and from 504.5 to 621 feet.)

WELL CONST	RUCTI	ON L	.OG:	
	Sto Date	rt Time	Fini Date	eh Time
Drilling:	4/26/04	10:30	5/05/04	15:50
Casing Install:			***	
4" Well -	5/10/04	9:35	5/10/04	10:30
2" Piezometer -			5/11/04	
Filter Placement:				
4" Well -	5/10/04	11:00	5/10/04	16:50
2" Plezometer -	5/11/04	11:10	5/11/04	13:00
Bentonite Placement: Lower - Intermediate -			5/07/04 5/11/04	
Upper -	5/11/04	13:10	5/11/04	16:00
Grout Placement: Lower - Upper -	5/06/04 5/11/04	10:40 17:10	5/06/04 5/13/04	11:30 16:00

WELL DEVELOPMENT LOG:

		Date	Stort Time	Finish Time
Predevelopment SWAB	4° 2°	5/10/04 5/11/04	16:20 12:45	16:50 13:00
4" Well Bailing		5/14/04	AM	PM
4" Well Pumping		5/18/04	10:45	12:30

Total Gallons Removed: 590

STABILIZATION TEST DATA:

Gallons	PH	Spec. Cond. (µs/cm)	Temp (°F)
270	7.79	350	69.6
340	7.75	350	69.6
390	7.76	344	68.4
485	7.72	347	68.7
580	7.73	353	69.8

Comments:

Surface completion - Christy box to grade. Development pumping at 4.75 gpm.

WELL MONITORING DATA:

Date	Time	Description	Corr.	Depth (feet)	SWL (fbgs)	Ву
5/14/04	11:00	2" piezometer prior to development	+0.36	388.26	388.62	MWV
5/14/04	11:05	4" well prior to bailing	+0.27	438.91	439.18	MWV
5/18/04	10:00	4" well prior to pumping	+0.27	449.24	449.51	JAS

N - 11BORING NO.:

> PAGE: 1 OF 13

JOB NO.: 2004-056
SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66 EASTING: 6742904.48

GW DEPTH: Variable TOTAL DEPTH: 621 feet

1ME	rate, Ft/Min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
0:30				Grab		5-			SW	ALLUVIUM: Light yellowish brown (2.5Y5/4), poorly sorted, subangular, very fine to very coarse SAND to GRAVELLY SAND with minor GRAVEL and trace SILT.	11-3/4" drive pipe, 10-5/8" tri-cone bit. Dry
	:			Grab		10				(9') — color change to brown (7.5YR4/3); increase in GRAVEL content.	(9') – moist cuttings.
				Grab		15-				(14') — color change to light yellowish brown (2.5Y6/3).	
				Grob		20-					
				Grob		25				(23') — color change to brown (10YR5/3).	
				Grab		30					
				Grob		35				(35') — color change to grayish brown (2.5Y5/2).	
				Grab		40-				(41') — slight increase in SILT.	
	A STATE OF THE STA			Grab		45					
				Grab		50					
The	e data	present	ed on	this loc	ı is n	simplific	ntion	of act	uel e	CONTINUED ON NEXT PAGE conditions encountered and applies only at the	

BORING NO.: N-11

PAGE: 2 OF 13

JOB NO.: SITE LOCATION: DRILLING METHOD: CONTRACTOR:

2004-056 LINDEN AVENUE, NEAR MYSL AIR ROTARY CASING HAMMER WDC EXPLORATION AND WELLS

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871.450.4 GW DEPTH: Variable TOTAL DEPTH: 621 feet

LOGGED BY: J. CZAJKOWSKI

NORTHING: 1871459.66 EASTING: 6742904.48

			0. 0210								
TME	rate, Ft/Min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN FEET	ELEVATION	IN FEET MATERIAL SYMBOL	USCS/GEDLOGIC FORMATION	DESCRIPTION	COMMENTS
						50			SW	same as above.	
				Grab		55	_				
				Grob		60					(58') – bit drills jumpy. (60') – easier drilling.
				Grab		65				(63') — slight increase in SILT.	•
										(66') — color change to light brownish gray (2.5Y6/2).	
				Grab		70-					
				Grab		75				(73') — color change to grayish brown (2.5Y5/2).	
				Grab		80-			SM	Grayish brown (2.5Y5/2), poorly sorted, very fine to very coarse SILTY SAND with minor fine to medium GRAVEL.	
				Grab		85		ASSESSED ASSESSED		to medium GRAVEL.	
				Grab		90-		SAN SAN SAN SAN			
								naskoskaska		(93') — color change to light brownish gray	
				Grab		95		SWANIANA WANA		(2.5Y6/2).	
				Grab		100	_				

BORING NO.: N - 11

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JOB NO.: 2004-056
SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: DATE FINISHED: ELEVATION: NORTHING:

4/26/04 5/06/04 1460.62 1871459.66 6742904.48 EASTING:

GW DEPTH: Variable TOTAL DEPTH: 621 feet

		D BY:		EASTING: 6742904.48									
TIME	rate, ft/min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	S DEPTH IN	1	ELEVATION IN FEET	MATERIAL SYMBOL		DESCRIPTION	COMMENTS	
				Grab		105-			iota ista ista kandalanda ista kanda k	SM	same as above. (106') — gradual increase in SILT.		
				Grab		110-		-	Name of the State				
<u>15</u> :30				Grab		115-		-	CONTRACTOR AND A CONTRA		·	(115') — bit drills jumpy.	
15:30 4/27 7:05	0.18			Grab		120-		1 - - - -	NANGANANANANAN		(10YR5/2).	(119') — lost circulation(123') — bit drills jumpy.	
7:45 9:15				Grab		125-		-	HONDARY CONTRACTOR		(124') – decrease in GRAVEL size to fine.	Junipy.	
	0.18			Grab		130-		-	The Kermanien				
10:20 11:00				Grab		135-			ESTANTATION SO	6	(135') — color change to light brownish gray (10YR6'/2).		
				Grab		140-				SW	Brown (7.5YR4/3), poorly sorted, subangular, very fine to very coarse GRAVELLY SAND with fine to medium GRAVEL clasts and trace amounts of SILT.		
			THE CONTRACT OF THE CONTRACT O	Grab		145-							
71.	0.44		ad ac	Grab	1	150-					CONTINUED ON NEXT PAGE		
and	aata at th	present e time	ea on of drill	ing. Sul	is a bsurfac	sımpli e con	rication dition	on of 18 m	acti ay di	ual c iffer	onditions encountered and applies only at the at other locations and may change with the a	iocation of this boring passage of time.	

BORING NO.:

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PAGE: 4 OF

JOB NO.: SITE LOCATION: DRILLING METHOD:

2004-056 LINDEN AVENUE, NEAR MYSL AIR ROTARY CASING HAMMER WDC EXPLORATION AND WELLS

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66

GW DEPTH: Variable TOTAL DEPTH: 621 feet

ME	rate, ft/min	TEMPORARY WELL COFIGURATION	COUNT/FT.	SAMPLE SIZE INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGK FORMATION	DESCRIPTION	COMMENTS
				Grab		155			SW	same as above.	
:45 /28 :15				Grab		160	-			(160') – grain size increase to medium to	(158') - easy drilling.
				Grab		165	—		:	very coarse SAND.	
	0.57			Grab		170-	<u> </u>				
50				Grab		175-	- -	P ER	SW/	(173') - less GRAVEL than above.	(477') 1.14.4.11
<u>50</u> 58				Grab		180	_		GW	Grayish brown (10YR5/2), poorly sorted, GRAVELLY SAND to SANDY GRAVEL with abundant fine to coarse SAND and fine to medium, subangular GRAVEL.	(177') — bit drills jump
	1.18			Grab		185	-			(187'-194') - Iess GRAVEL than above.	
	. 10			Grab		190-	_				
15 26				Grob		195				(196') — color change to light brownish gray (10YR6/2).	
.20	0.75			Grab		200-	-				(200') – telescope with 9–5/8" drive pipe, open-hole drilled to 220'.

BORING NO.:

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JOB NO.: 2004-056
SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS

LOGGED BY: J. CZAJKOWSKI

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62

NORTHING: 1871459.66 EASTING: 6742904.48 GW DEPTH: Variable TOTAL DEPTH: 621 feet

		ום ע:								EASTING: 6742904.48	
TIME	rate, Ft/Min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
	0.75			Grab		205-			SW/ GW	(205') - more GRAVEL than above.	(200') – telescope with 9–5/8" drive pipe, open-hole drilled to 220'(205') – bit drills jumpy.
8:42 12:22				Grab		210-	- - - -				
12:33	0.73			Grab		215-	-				
12:33 13:02				Grab		220-	-			(218') - more GRAVEL and COBBLES than above.	
				Grob		225					
	1.54			Grab		230-				(ozel)	
47.45				Grab		235		10.1	SW	(232') — less GRAVEL than above. Yellowish brown (10YR5/4), poorly sorted, fine to coarse GRAVELLY SAND with minor fine to	
13:15 13:25				Grab		240-				medium GRAVEL.	
				Grab		245-	_				
	1.33		T WHAT	Grab		250-			A, A PARKA CALL	(248') - color change to brown (10YR4/4).	
							 			CONTINUED ON NEXT PAGE	

N-11 **BORING NO.:**

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JOB NO.: SITE LOCATION: DRILLING METHOD:

2004-056 LINDEN AVENUE, NEAR MVSL AIR ROTARY CASING HAMMER WDC EXPLORATION AND WELLS

CONTRACTOR: LOGGED BY: J. CZAJKOWSKI DATE STARTED: DATE FINISHED: ELEVATION: NORTHING:

4/26/04 5/06/04 1460.62 1871459.66 EASTING: 6742904.48 GW DEPTH: Variable TOTAL DEPTH: 621 feet

ME	rate, ft/min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN FEET	ELEVATION	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
·40				Grab		255—			SW	(254') - color change to brown (10YR5/3).	
:40 :47				Grab		260					
				Grob		265					
	1.82			Grab	-	270				(271') — less GRAVEL than above.	
3:58 4:08				Grab		275					
4:08				Grab		280					
	2.00			Grab		285			GW/ SW	Grayish brown (10YR5/2), poorly sorted, fine to medium GRAVELLY SAND to SANDY GRAVEL with abundant fine to very coarse SAND.	
	2.00			Grob		290			STANDESTANDESTAND		
<u>4:18</u>				Grob		295-			B ENTRY BENTAL BEN		
4:27				Grob		300			Netseau Netseau	CONTINUED ON NEXT PAGE	

and at the time of drilling. Subsurface conditions may differ at other locations and may change with the passage of time.

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JOB NO.: 2004-056

SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66 EASTING: 6742904.48

GW DEPTH: Variable TOTAL DEPTH: 621 feet

TIME	rate, ft/min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	FEET	ELEVATION IN FEET	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
						300-				GW/ SW	same as above.	
	1.11			Grab		305-				GW	Brown (10YR5/3), poorly sorted, fine to coarse SANDY GRAVEL with abundant medium to coarse SAND.	
				Grab		310-		-			(309') - color change to grayish brown (10YR5/2).	
				Grab		315-				SC	Brown (7.5YR4/4), moderately sorted, very fine to coarse CLAYEY SAND with minor fine to medium GRAVEL and SILT.	(314') - moist cuttings.
14:45 14:55			-	Grab		320-					(318' - 322') - increase in SILT fraction, trace GRAVEL. (320') - less coarse SAND than above.	
				Grob		325-		-				
	1.00			Grab		330-		_				
				Grab		335-					(333') — less GRAVEL than above.	Air off at 15:15, no groundwater at 15:35.
15:15 16:01				Grab		340-			KANASKANASKANASKAS	SM	Reddish brown (2.5YR5/3), well sorted, fine to medium SILTY SAND with minor CLAY and scattered fine to coarse, subrounded GRAVEL.	
	1.00			Grab		345-			Kokkakon	SW	coarse GRAVELLY SAND with fine to coarse	Air off at 16:15, no groundwater at 16:35.
16:11 16:40				Grab		350-					GRAVEL.	
The	data	present	ed on	this log	is a	simpli	fication	on of	acti	ial c	CONTINUED ON NEXT PAGE onditions encountered and applies only at the at other locations and may change with the p	location of this boring

BORING NO.:

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GW DEPTH: Variable TOTAL DEPTH: 621 feet

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JOB NO.:

SITE LOCATION: DRILLING METHOD: CONTRACTOR: 2004-056 LINDEN AVENUE, NEAR MYSL AIR ROTARY CASING HAMMER WDC EXPLORATION AND WELLS

LOGGED BY: J. CZAJKOWSKI

4/26/04 5/06/04 1460.62 1871459.66 DATE STARTED: DATE FINISHED: ELEVATION: NORTHING:

EASTING: 6742904.48

TIME	rate, ft/min	TEMPORARY WELL COFIGURATION BLOWS	(COUNT/FT.) SAMPLE SIZE, INCHES	SAMPLE	DEPTH IN FEET	ELEVATION IN FEET	MATERIAL	USCS/GEDLOGIC FORMATION	DESCRIPTION	COMMENTS
	2.40		Grab	35	5			SW	same as above.	
16:45 4/29 7:17			Grab	36	0					No groundwater at 7:00 on 4-29-01.
	1.00		Grab	36	5-1	-				
7:27 8:06	<u></u>		Grab	37	0		CONTRACTOR (CANADA	SM	Reddish brown (7.5YR4/3), moderately well sorted, fine to medium SILTY SAND with minor CLAY and trace amounts of GRAVEL.	
	1.25		Grab	37	5		AND A	SW	Brown (10YR5/3), poorly sorted, fine to very coarse GRAVELLY SAND with fine to coarse, subrounded GRAVEL.	
8:14 8:34			Grab	38	0			SP	Brown (10YR5/3), well sorted, fine to medium SAND with minor SILT.	
	1.67		Grab	38	5		New York Control of the Control of t	SM/ ML	Brown (10YR5/3), well sorted, very fine to medium SILTY SAND to SANDY SILT with trace amounts of scattered CLAY.	
8:40 9:34			Grab	39	0	1st	KONTANTA			Air off at 7:27, no groundwater at 7:45.
	0.77	SAMPLE	Grab	39	5		Mondo Sond Hond			(380') — dry. (382') — moist. Air off ot 8:40, no groundwater at 9:05.
9:47 10:30		OPEN BOREHOLE SA	Grab	40	0-		PATRONIO NO PATRO			Muddy cuttings on sounder probe, but no free water at 10:00.
The	data at th	presented	on this log drilling. Sul	is a sim bsurface (plificati conditio	on of	act ay d	ual c iffer	CONTINUED ON NEXT PAGE conditions encountered and applies only at the at other locations and may change with the	location of this boring cassage of time.

N - 11BORING NO.:

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JOB NO.: 2004-056
SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: DATE FINISHED:

4/26/04 5/06/04 1460.62 ELEVATION: NORTHING: 1871459.66 EASTING: 6742904.48

GW DEPTH: Variable TOTAL DEPTH: 621 feet

	LUGGE	D BY:	J. CZAJ	KUWSKI							EASTING: 6742904.48	
	rate, Ft/Min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	1	ELEVATION IN FEET	MATERIAL	=	DESCRIPTION	COMMENTS
10:30						***			SERVEN SER	SM/ ML	same as above.	
	1.50	OPEN BOREHOLE SAMPLE				405			INGS		Brown (10YR5/3), moderately well sorted, fine to medium GRAVELLY SAND with abundant fine GRAVEL.	
		OPEN BOI		Grab		410-			1 2	SM	Yellowish brown (10YR5/4 to 5/6), poorly	(412') - poor cuttings return.
10:40 14:50				Grab		415			<u> </u>	3141	sorted, subangular to subrounded, fine to medium SILTY SAND with abundant SILT and minor coarse SAND.	SWL(1)=389.85' bgs in open hole on 4-29-04(413'-450') - very poor cuttings return.
				0100		425		-	A MANAGEMENT AND MANAGEMENT		(423') — finer—groined than above.	
	0.92					430		-	Webliebung Konstanting			
						435						
15:15 16:07				Grab		440-			A CONTRACTOR	SW	Brown (10YR5/3), loose, poorly sorted, very fine to coorse GRAVELLY SAND.	(438') — no free water.
	0.92					445-		<u></u>				
16:20 4/30 8:05				Grob		450		4լի 3rd —5th 2nd			·	(450') — no free woter at 7:00 on 4—30—04.
											CONTINUED ON NEXT PAGE	

N - 11**BORING NO.:**

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JOB NO.:

2004-056

SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

4/26/04 5/06/04 1460.62 DATE STARTED: DATE FINISHED: **ELEVATION:**

GW DEPTH: Variable TOTAL DEPTH: 621 feet

NORTHING: 1871459.66 EASTING: 6742904.48

IME	rate, ft/min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	I CEL	IN FEET MATERIAL	SYMBOL USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
/30 :05		·				450		2nd ¥	SW	same as above.	(450') — no free water at 7:00 on 4—30—04.
	0.30			Grab		455-					
38				Grab			H			(459'-461') - more SILT than above.	
41						460				included to the time of the time doore.	(460') — easy drilling; damp cuttings; no free water.
	0.71			Grab		465				(465'-469') — less GRAVEL than above.	
55 :20			·	Grab		470					(470°) muddy aythia
:26	0.67				-						(470') — muddy cutting but unstable borehole.
:30	0.20	N-11-2		Grab	:	475				(477') — more SILT than above.	(474') — unstable borehole, heaving sand. SWL(2)=451.86' bgs in
:00 02 50		11 11 2	•	Grob		480-					temporary well at 7:00 of 5-2-04.
				Grob		485-					
	1.54			Grob		490				(491'-493') - more GRAVEL and COBBLES than above.	
				Grob		495-			3		
:03 '03 15	*(P) .			Grab	*************************************	500-			SM GW	Yellowish brown (10YR5/4), poorly sorted, subangular to subrounded, arkosic, fine to medium SILTY SAND with minor coarse SAND and thin, scottered GRAVELLY lenses.	(500') — muddy cutting but little free water.
										CONTINUED ON NEXT PAGE	
The	data	present	ed on	this log	is a	simplif	ication	of a	ctual (conditions encountered and applies only at the at other locations and may change with the	location of this boring

BORING NO.: N-11

> PAGE: 11 OF 13

GW DEPTH: Variable

TOTAL DEPTH: 621 feet

JOB NO.: 2004-056

SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: DATE FINISHED:

E STARTED: 4/26/04 E FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66 EASTING: 6742904.48

											EASIING: 0742904.40	
TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	7EE	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
5/03						500-	T	<u> </u>		SM	same as above.	(500') - muddy cuttings,
9:15								Ī		GW	Light yellowish brown (10YR6/4), weathered,	but little free water.
									X		poorly sorted, coarse SANDY GRAVEL with	
				Grab				-			abundant rounded to subrounded, granitic and schistose GRAVEL with medium to coarse SAND	
	1.43			O UU		505-		 			and quartz and plagioclase clasts.	
									2		(506'-509') - SANDY lens, little to no	
							-				GRAVEL.	
9:22				Grab			_	-				
16:22		N-11-3		0100		510-					(510') - more GRAVEL than above.	(510') — abundant free
												water.
							-	-			/E+7' E16'\	SWL(3)=449.01' bgs in temporary well at 14:45 on
				Grob					2		(513'-516') — finer-grained than above,	5-3-04.
	1.00					515-						
							 		7 X			
			٠.				-	-	2			
16:32				Grab		520-		L				
17:30						320		Γ	2 X			Unstable borehole.
							-	-			(521'–524') – SILTY lens, little to no GRAVEL.	
											OMAYEE.	
			-	Grab		525-		L				
						020			1	<u></u>		
		-					\vdash			SW	Light yellowish brown (2.5Y6/3 to 5/3), poorly sorted, subrounded, fine to coarse, arkosic	(527¹) oh
	1.38		-								GRAVELLY SAND with rounded granitic and	(527') — abundant free water.
	1.30			Grab		530-		L			schistose GRAVEL.	
		i						-				
								1				
								1				
				Grab		535-		L				
							-	-				
17:43												
5/04 7:19								<u> </u>				
	0.75			Grab		540-		ļ.	535	SM/ ML	Brown to yellowish brown (10YR5/3 to 5/4),	
7:23 8:10									nosta in termo contrata contrata contrata de la con	IVIL	poorly sorted, subrounded, fine to medium SILTY SAND to SANDY SILT with scattered,	(541') - homing and
								1			rounded GRAVELLY lenses and minor coarse	(541') — heaving sand; drive casing 10 feet.
											SAND. Increasing SILT with depth.	,
				Grab		545	 	-	28.8			
	0.50								4.56			
									New			
8:30				Grab		550		_	25.25		(549'-551') - GRAVELLY lens.	
13:20									100		(551') — more SILT and fine SAND than	(551') — sand heaved
											above, little to no GRAVEL. CONTINUED ON NEXT PAGE	30'.
The	data					<u> </u>		<u> </u>	أبسيا	لسبسا	CONTINUED ON NEXT PAGE	

BORING NO.:

N-11

PAGE: 12 OF

13

SITE LOCATION: DRILLING METHOD:

JOB NO.: 2004-056
TE LOCATION: LINDEN AVENUE, NEAR MYSL
LING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

CONTRACTOR:

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66 EASTING: 6742904.48

GW DEPTH: Variable TOTAL DEPTH: 621 feet

											CASTING: 0/42904.45	
TIME	rate, Ft/Min	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	FEET	ELEVATION IN FEET	MATERIAL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
8:30 13:20	NA					550			100	SM/ ML	same as above.	
3.20									Keek	IWL	(551') — more SILT and fine SAND than above, little to no GRAVEL.	(551') — Sand heaved 3 feet.
				Grab		555-			KSS-XX-			
	0.67								373.53			
			:						(SNA)			
3:35 4:35				Grab		560-		<u> </u>	4,414,61			
4:35									NAME OF			(561') — heaving sand.
				Grab					SAMA			
	1.00					565-		-	100 MAY			
									New York		(567'–569') – GRAVELLY lens.	
4:45				Grab		570-		1	16446			
5:25									16.47.16			(571') — unstable, mino heave in borehole.
				Grab					1000			World III Solicities
	NA					575-		T	150.00			
										GW	Light olive brown to olive brown (2.5Y5/3 to	
				Grab		580-		-			4/3), weathered, friable, subrounded to rounded, poorly sorted, coarse SANDY GRAVEL	(579'-600') - abundant free water.
3:10		N-11-4									with medium and coarse arkosic SAND and iron-oxide stained, rounded, schistose and	SWL(4)=449.18' bgs in
				Grab							granitic GRAVEL with quartz and plagioclase fragments.	temporary well at 11:00 o 5-5-04.
				0.00		585-		†				
į				Grab		590-		-				
	0.57						-				(591'-596') - SILTY lens, little to no coars SAND or GRAVEL.	2
				Croh							SAND OF DIMPLE.	
				Grab	i	595-		+				
7.45				Grob		600-						
3:45 4:58									1		(601') — color change to light yellowish brown (10YR6/4 to 5/4).	Sand heaved over 20'.
		present							TY.		CONTINUED ON NEXT PAG	

N - 11BORING NO.:

> PAGE: 13 OF 13

JOB NO.: 2004-056
SITE LOCATION: LINDEN AVENUE, NEAR MYSL
DRILLING METHOD: AIR ROTARY CASING HAMMER
CONTRACTOR: WDC EXPLORATION AND WELLS
LOGGED BY: J. CZAJKOWSKI

DATE STARTED: 4/26/04 DATE FINISHED: 5/06/04 ELEVATION: 1460.62 NORTHING: 1871459.66

EASTING: 6742904.48

GW DEPTH: Variable TOTAL DEPTH: 621 feet

TIME	RATE, FT/MIN	TEMPORARY WELL COFIGURATION	BLOWS (COUNT/FT.)	SAMPLE SIZE, INCHES	SAMPLE NO.	DEPTH IN	FEE	ELEVATION IN FEET	MATERIAL SYMBOL	USCS/GEOLOGIC FORMATION	DESCRIPTION	COMMENTS
13:4 <u>5</u> 14:58						600-				GW	same as above. (601') — color change to light yellowish brown (10YR6/4 to 5/4).	Sond heaved over 20'.
		·	,	Grab		605-				SW	Light olive brown (2.5Y5/4), weathered, poorly sorted, subrounded to rounded, fine to coarse GRAVELLY SAND with scattered SILTY lenses, and rounded schistose and granitic GRAVEL	(605') — drive casing difficult to advance.
	0.38			Grab		610-					with quartz, quartzite, and plagioclase fragments.	
		N-11-5		Grab		615-					(614') — finer—grained than above, more SAND and SILT, less GRAVEL than above.	
15:50				Grab		620-					Notes:	SWL(5)=449.40' bgs in temporary well at 14:20 or 5-6-04.
						625-		-			 Total depth of boring 621 feet. Heave conditions encountered below 470'. First groundwater measured at 389.85 feet below ground surface (bgs). 	
						630-		-			 Second (unconfined) groundwater measured at 451.86' bgs and sampled in temporary well (475'-478'). Third (confined) groundwater measured at 449.01' bgs and sampled in temporary well (501'-506'). 	
						635-				-	 6. Fourth (confined) groundwater measured at 449.08' bgs and sampled in temporary well (578'-581'). 7. Fifth (confined) groundwater measured at 449.40' bgs and sampled in temporary well 	
						640-					(618.5'-620.5'). 8. Borehole backfilled to 504.5' bgs using neat cement with 5% bentonite. 9. 2-inch piezometer installed in boring, screened from 403' to 413' bgs.	
					•	645-		-			 4—inch monitoring well installed in boring, screened from 460' to 495' bgs. 	
						650-						
The	data at th	present e time	ed on of drill	this log ling. Su	ı is a bsurfac	simpli se cor	ification indition	on of	f acti ay di	ual c	onditions encountered and applies only at the at other locations and may change with the	location of this boring passage of time.

	Chemica	l Analyses		12	to	lodn	SOIL DESCRIPTION
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type Sample Number	Blows per Foot	Lithology Symbol U.S.C.S. Designation	AND CLASSIFICATION
Aboveground well monument with locked lid, well stickup has locking cap Concrete backfill (0-6 feet bgs)	let selb r 3 GA	- Cobbin	5-	S S S IW		1 GM	Surface sample collected Light Gray-Brown Silty GRAVEL with fine to coarse Sand, cobbles and occasional boulders, some organic debris, dry
Total Control of the	the s		10-		TF		Large Cobbles and Boulders
11.75-inch diameter borehole (0-202 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal			15— 20— 25— 30—	-20	41	\$5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Light Gray-Brown, Poorly-graded, fine to coarse, subangular to subrounded GRAVEL with fine to coarse Sand and Silt, some cobbles, dry, no odor, dense End drilling and sampling on 7/26/04, continued drilling and sampling on 7/27/04
and the state of t	FARM		35- 40- 45-	#W -40		68 6965656565	(Very rocky-Driller's comment) Poorly-graded GRAVEL and Cobbles with Silt, same as above, increase in cobbles and occasional boulders, dry, no odor
			-				Decreasing Gravel and Cobbles
SURFACE ELEVATION TOTAL DEPTH (feet): DATE DRILLED: 07/2	480.0	108 900		ISL		DIAME	D BY: D. Ford/B.Bondy TER OF BORING (inches): 11.75-9.63 TO STATIC WATER (feet): 454 bgs
KLEI	NFE	ELDE	E R	LINGS OF		enova Site h Alder Av	venue, Rialto, California 92337
PROJECT NO. TW	7-1	WED	Migh	LC)G O	FROR	ING TW-1

	Chemical	Analyses			per	to	loqu		SOIL DESCRIPTION
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Sample Number	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	AND CLASSIFICATION (Continued From Previous Page)
Hew DEVACED with the first of the contract of	illes ses unverifi erddioc ernsan a	guille in said guille in said ann an said luight an	55-					SP	Brown, Poorly-graded, fine to medium subangular SAND with fine to coarse Gravel and Cobbles, some coarse sand, dry to slightl
		382 s	65-		W1-60	77		GP	moist Large cobbles and boulders Brown, Poorly-graded, fine to coarse subrounded to rounded GRAVEL with fine to coarse Sand, some cobbles, trace silt, moist, no odor, very dense
11.75-inch diameter borehole (0-202 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal			70	- Annual Control of the Control of t	-80	47		GP	
tradeso	Fredhald	ibm ye	85— - -				0000	1	Poorly-graded SAND with Gravel (from soil cuttings)
mbe or yet			90-				000000000000000000000000000000000000000	GP GP	Increase in Gravel
JRFACE ELEVATION (feet) OTAL DEPTH (feet) ATE DRILLED: 07,	: 480.0	ROU TO		ISL			I	DIAME	ED BY: D. Ford/B.Bondy ETER OF BORING (inches): 11.75-9.63 I TO STATIC WATER (feet): 454 bgs
KLE	INF	ELD	ER	1000				va Site lder A	venue, Rialto, California 92337
ROJECT NO. TV	17.1	Literacon	Vurnenc				O.F.	DOD	UNG TW-1

	Chemica	Analyses		1 1	10	odn		SOIL DESCRIPTION
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Blows per Foot	G Lithology Symbol	U.S.C.S. Designation	AND CLASSIFICATION (Continued From Previous Page)
Cot set have set	arvi eli	La Table Figuralis	100-	10 10 10 Duj	q	00000	9	Dark Gray-Brown, Poorly-graded, fine to coarse subrounded to rounded GRAVEL and Cobbles with fine to coarse Sand, dark gneiss gravels, no odor, very dense
			105			00000		Large cobbles and boulders, very slow drillin
Dens Ling	Jane 15		110-			0000		
			115—			00000		Very slow drilling, large cobbles
		0.= 0.	120 —			000000	GP	
11.75-inch diameter borehole (0-202 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal			125			5000	1	Decreasing gravels and cobbles
of freeze, freeze, and a second of the secon			130		TI-	0000		
e de la composição de l			135			0000		
- OhAS v		-	140	Erwi	60	0000	SP	Gray-Brown, Poorly-graded, fine to coarse subangular micaceous SAND with fine to coarse Gravel, trace cobbles, moist, no odor, very dense
			145			. (
SURFACE ELEVATIO TOTAL DEPTH (feet): DATE DRILLED: 07/2	480.0					LC DI	AMET	D BY: D. Ford/B.Bondy FER OF BORING (inches): 11.75-9.63 TO STATIC WATER (feet): 454 bgs
KLEI	NFE	LDE	R		ner D Nort			enue, Rialto, California 92337
ROJECT NO. TW								lc lc

	Chemica	Analyses			per	to	oqu		SOIL DESCRIPTION			
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Sample Number	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	AND CLASSIFICATION (Continued From Previous Page)			
The second secon	E provinció P Salomo Par Archi Par Archi et Lune to	in Creyo de Sala de Sala de Sala de Sala de Sala	150— ———————————————————————————————————			3	0,0000		As above, fine to coarse sand, fine subangula gravels up to 1-inch diameter			
			160					GP	Light Brown, Poorly-graded, Sandy GRAVE			
11.75-inch diameter			165— — — — — — —				SP	Light Brown, Poorly-graded, fine to coarse SAND with fine Gravel				
borchole (0-202 feet bgs), 4-inch diameter, Schedule – 80 PVC casing, Volclay grout seal		_	175—		18G 85	85		GP	Gray-Brown and Light Brown, Poorly-graded fine to coarse subangular to rounded GRAVEL with fine to coarse micaceous Sand			
ano oranii kebe	*shoot	mwer84	185						trace silt, decomposed granite and gneiss gravels, slightly moist to moist, no odor, very dense Poorly-graded Gravelly SAND			
o on assert trade		mentage mentage diame	190									SP
JRFACE ELEVATIO DTAL DEPTH (feet): ATE DRILLED: 07/2	480.0	guera se) SUTTERNA	SL	0		D	IAME	D BY: D. Ford/B.Bondy TER OF BORING (inches): 11.75-9.63 TO STATIC WATER (feet): 454 bgs			
KLEI	NFE	LDE	ER					a Site der Av	venue, Rialto, California 92337			

HOTTONION	Chemical	Allalyses			lper	oot	di		SOIL DESCRIPTION
Well Construction		Field		Sample Type	Sample Number	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	AND
2011/L3181	Lab.	ab. PID	毎年	uple.	oble	WS	oloc	S.C.S	CLASSIFICATION
	7 hold	(ppm)	Depth (feet)	San	San	Bio	=	U.S Des	(Continued From Previous Page)
11.75-inch diameter							09	L	Very slow and hard drilling, large cobbles and
borehole (0-202 feet bgs), 4-inch			- 1	1			0		gravel
diameter, Schedule -			-	1			00	GP	
80 PVC casing - Volclay grout scal			200 -	11			09	OI.	
Voicialy grout scal	600	de la Sal	20				00		
							Og		Drilled/sampled to 202-feet bgs on 7/27/04,
9.63-inch diameter borehole (202-480			3.5	1			-5	-	continued drilling and sampling on 7/28/04
feet bgs), 4-inch			205 -	1			O		
diameter, Schedule - 80 PVC casing, -							,		
Volclay grout seal							0		
			1.52	11			r		
ayayan basel	Daniel III	and the	210-	1				SP	Light Brown, Poorly-graded, fine to coarse
and the violent of		LIBOUR	15				0		SAND with fine subrounded to subangular
there exist be a		ami es					1		metamorphic Gravel, trace silt
a shiperman b	a Time			-			q		
		F=1 00	215-	1			0		
		7					0	3	B 20
							0		
				TITLE.	w		170	8 -	Light Brown, Poorly-graded, fine to coarse
			220 -	1	220	71	20	GP	subrounded to subangular GRAVEL with
9.63-inch diameter	frent.	MARKED BY					0.0		medium to coarse micaceous Sand, trace silt,
borehole (202-480 feet bgs), 4-inch		Text	10	11			D,		slightly moist to moist, very dense, same type
diameter, Schedule				-			00		gravel as at 210-feet bgs
80 PVC casing, Volclay grout seal			225 -				(C)		
W oretay grout sear]							7	
	-			-			ÞĽ		
	-		220				3		
			230 -					SM	Silty fine to medium SAND with trace coarse
	- 8	15 40		4 1			Ϊþ		sand and fine gravel
	-			+ 1			ΞĦ		
	1		225	11			БĦ		
]		235-				뒘		
				- 1			ÞΙ		
	-			+ 1			ÞΒ		
			240-				PB		
]	4	240-					1.0	Increase in gravel content
STEER STEER	D DOOR	111000		-			Ţ.	-	
	-		9	-			SI+		
					-		ьH		
URFACE ELEVATION	ON (fact). Annros	v 1 640)	USI	1		T	OGGI	ED BY: D. Ford/B.Bondy
). Approx	A. 1,040 I	VIOL					ETER OF BORING (inches): 11.75-9.63
OTAL DEPTH (feet)									TO STATIC WATER (feet): 454 bgs
ATE DRILLED: 07/	/26/04 t	hrough (08/03/04				E	EPIF	ETO STATIC WATER (ICCI). 454 0gs
				1	1				
	r ar wa	e r p	ED					va Site	The state of the s
KLE	INF.	ELD.	EK	2	610	0 No	ı A	lder A	venue, Rialto, California 92337
mreak' and									
M ANY THE									le

	Chemica	l Analyses) Ser		ot nbol		SOIL DESCRIPTION	
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Sample Number	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	AND CLASSIFICATION (Continued From Previous Page)	
Consequence of the State of the	Drug bo	y clow i jed; kelibuga dinast di	250 —					SM	Same as above	
tracial like to call and a subsequence of the subse	Chaoli , dine ni di dine ni di Grane	on <u>ali</u> u morali Mgana		Try 20	VI 71	7	GP	Light Brown, Poorly-graded, fine to coarse GRAVEL with predominantly medium to coarse Sand, trace silt and fine sand, weathered granitic and metamorphic gravel a at 220-feet		
9.63-inch diameter borchole (202-480 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal	hooft, calcular an area can up a		270 — 					SP	Light Brown, Poorly-graded SAND with Gravel	
essen disection		ert nogi nër bitar i s	280 —		The second second second				Same as above	
			290					SP	Increase in Gravel content	
URFACE ELEVATION OTAL DEPTH (feet) ATE DRILLED: 07/	: 480.0	ADB 30.		SL			DI	AME"	D BY: D. Ford/B.Bondy IER OF BORING (inches): 11.75-9.63 TO STATIC WATER (feet): 454 bgs	
KLEI	NFE	LDE	R					a Site ler Av	PLATenue, Rialto, California 92337	
ROJECT NO. TV	V-1	WIE	MISTO	L	00	G O	F B	OR	ING TW-1	

	Chemica	Chemical Analyses		1	b	i i	loqu		COM PROGRAMMAN	
Well Construction		Field		Type	Sample Number	Blows per Foot	Lithology Symbol	tion	SOIL DESCRIPTION AND CLASSIFICATION	
	Lab.	PID	Depth (feet)	Sample Type	mple	d swa	aws p	U.S.C.S. Designation		
	ER CALE	(ppm)		Sa	Sa	m	17	DĞ	(Continued From Previous Page)	
	7		295 -	1			000	-9		
	1						000	-		
			300		w	67	300	GP	Light Brown, Poorly-graded, fine to coarse	
been been the sale of	Harry	autorio	9]		300		000	0.	GRAVEL with fine to coarse Sand, trace silt same gravel types as above, iron oxide	
		Her	12				000		staining on on some gravel End drilling and sampling to 299-feet bgs on	
			305 —				000		7/28/04, continued on 7/29/04	
			- 2	1			000			
	}		-			T SCALL	00°			
			310-			9776	000			
							, C			
A a monthle		وللسعرا	315-				000	E		
S &- 1 D .			1		1		000	F		
9.63-inch diameter borchole (202-480 feet bgs), 4-inch			_							
			320 —				0	GP	Same as above	
diameter, Schedule 80 PVC casing.			-				P. C.S.			
Volclay grout seal			325—							
			_		1		Ħ			
			-							
Committee of the land	at 01 mil	mark.	330 —		ij.	l'T	H	SP- SM	Light Brown, Poorly-graded, fine to coarse	
A Lineary Spices office			100				I	Sivi	subangular to subrounded SAND with fine rounded to subrounded metamorphic Gravel	
	2.0	No.	335				Ħ		and Silt, moist	
							E Control			
					U	110	H	1	Orange-Brown and Brown, Poorly-graded,	
a Who T and	OF STATE OF		340	TV -3	40	110	H	SP- SM	fine to coarse subangular SAND with fine subrounded gneiss and schist Gravel and Silt,	
THE RESERVE AND ADDRESS OF THE PARTY OF THE				- 000			3141		moist, no odor, very dense	

	Chemical	l Analyses		0	25	t	loqu		COTI PROGRAMM	
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Sample Number	Blows per Foot	Lithology Symbol	100000000000000000000000000000000000000	SOIL DESCRIPTION AND CLASSIFICATION (Continued From Previous	Page)
	anydia z "SVI krep i z krapi galina za "Mi	345 —						Decreasing overall grain size and grace content		
			360				nnn	SP- SM		
9.63-inch diameter borchole (202-480 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal			365					SP	Grades into Light Brown to Red-Bro to medium, Poorly-graded SAND wi coarse sand and little very fine grave	th some
			370							
			375							
the of any fall- th day (IVAR be- ter) adaptament	HATELOW HATELOWNER HOLLEWAY		380	3: -3: Di	80 80	87		SP	Red-Brown, fine to medium, Poorly-g SAND, as above, trace silt, some grav decomposed granitic sand, slightly me odor, very dense	vel.
on Proorly grading SAND with the Salist Gravel success	ill bini sar sid sar sid sar sid di yare		390			11.0		SP- SM	Yellow-Brown, fine to medium, Poor SAND with fine Gravel and some Silt coarse sand	ly-graded I, trace
FACE ELEVATION CAL DEPTH (feet): TE DRILLED: 07/2	480.0			L	d		DL	AMET	D BY: D. Ford/B.Bondy ER OF BORING (inches): 11.75-9.63 FO STATIC WATER (feet): 454 bgs	HUEPAG TOTAL DATED
KLEII	NFE	LDE	D					Site er Ave	enue, Rialto, California 92337	PLATI
DJECT NO. TW-	1	L-WT	DESCRIPTION OF THE PARTY OF THE	L(00	; O	FΒ	ORI	NG TW-1	1h

ENVIRONMENTAL DENOVA-1.0PJ KA RDLND.GDT 9/20/04

	Chemical Analyses				- E	loqt		SOH DESCRIPTION	
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION AND CLASSIFICATION (Continued From Previous Page)	
in lies of interest of the particular of the par	I lange (Circle) (See The Circle)	nak galawa ana na ana oka anang	395 —	SM	Increasing moisture and silt content at 395-feedbgs Red-Brown to Brown, Silty fine to medium SAND with some fine Gravel and a trace clay very moist, no odor				
edick as begin epiles			405			大きったった	GP	Increase in Gravel content (coarse fraction in soil cuttings) Yellow-Brown, Poorly-graded, fine to coarse Sandy GRAVEL	
9.63-inch diameter borehole (202-480 feet bgs), 4-inch diameter, Schedule 80 PVC casing, Volclay grout seal		distantification of the control of t	410	0.000		Rock dust in cuttings			
ested, fames ces court Sard sed	(3-21) (3-10) (3-310)		420	1 W	68		SP	Brown, Poorly-graded, fine to medium subangular to subrounded SAND with fine Gravel, trace coarse sand, quartz and ferromag. minerals dominant, moist, no odor, very dense	
Hydrated bentonite chip seal (429-439 feet bgs)	messes previous cany dos come tre	ALE OF THE STATE O	430 —				SP	Orange-Brown, Poorly-graded SAND with Gravel, same as above, very moist soil cuttings	
URFACE ELEVATION OTAL DEPTH (feet): OATE DRILLED: 07/2	480.0			L		DL	AMET	DBY: D. Ford/B.Bondy ER OF BORING (inches): 11.75-9.63 TO STATIC WATER (feet): 454 bgs	
KLEI	NFE	LDE	D		mer Do		2000	PLATE	

		Chemical Analyses				1.5		Pool		Supplied Science Co.	
Well Construction	Lab.	Field PID (ppm)	Depth (feet)	Sample Type	Sample Number	Blows per Foot	Lithology Symbol	U.S.C.S. Designation	SOIL DESCRIPTION AND CLASSIFICATION		
		adion coli di colo di colo co	ANTE DE LES CONTROL D	445-					SP	(Continued From Previous Page) Same as above, fine metamorphic gravel, vermoist Increasing Gravel content in soil cuttings Light Brown, Poorly-graded, fine to coarse SAND with Gravel, schist and gneiss rock fragments, very moist to moist with rock dus	
	9.63-inch diameter borchole (202-480 feet bgs), 4-inch diameter, Schedule 80 PVC casing. Volclay grout seal	o isemi gev gev	ii keeti gasaa gasaa gasaa gasaa gasaa	455	∭ rw; -460	FW1 -460	83		GM	Static groundwater gauged on 7/30/04 (am) approximately 454-feet bgs Mottled Orange-Brown and Brown, Silty fint to coarse GRAVEL with fine to coarse Sand trace clay, water saturated, no odor, very den End drilling and sampling to 460-feet bgs on 7/29/04, continued drilling and sampling on	
	Centralizer on bottom 10-foot screen section	Sergeric London London London London		470-			000000000000000000000000000000000000000		GP- GM	Dark Brown, Poorly-graded, fine to coarse GRAVEL with fine to coarse Sand and Silt, wet, no odor Poorly-graded GRAVEL, grades into Silty	
	Sand backfill (Approx. 475-480 feet bgs)	Total Control	- I	480	- Intwi	W1 48d		Na Na	GP GM	GRAVEL Brown, Silty, fine to coarse, subangular to subrounded GRAVEL with fine to coarse Sand, trace clay, water saturated, no odor End drilling and sampling on 7/30/04 Well installed from 7/30/04 to 8/03/04	

CEDAR AVENUE 1N/5W-27D2-4

Depth, in feet	Thickness, in feet	Characteristics of the action of the control of the
0-30	30	Sand, very coarse to medium, gravel, cobbles, and boulders, moderate yellowish brown
30-55	25	Sand, coarse to very coarse, some medium sand, gravel, and cobbles, dark yellowish brown
55-75	20	Sand, very coarse to coarse, gravel, and cobbles, dusky yellowish brown
75-88	13	Sand, very coarse to coarse, cobbles, and boulders, light olive gray
88-98	10	Sand, coarse to very coarse, gravel, cobbles, and boulders, olive gray
98-110	12	Cobbles, gravel, and very coarse to medium sand, light olive gray
110-155	45	Sand, coarse to medium, some very coarse sand, gravel and cobbles, dark yellowish brown
155-213	20	Sand, coarse to very coarse, medium sand, gravel, and cobbles, dark yellowish brown
213-230	17 H =	Sand, very fine to fine, and clay, some medium to very coarse sand, dark yellowish brown
230-243	13	Sand, medium to coarse, some fine sand, dark yellowish brown
243-252	9	Sand, coarse to fine, and clay (40%), dark yellowish brown
252-270	18	Sand, medium to coarse, some fine sand, gravel, and clay (trace at 258'-262'), dark yellowish brown

Depth, in feet	Thickness, in feet	Characteristics NE-WEWI
270-283	33	Sand, coarse to medium, some fine sand, dark yellowish brown, and clay, moderate yellowish brown
283-307	24	Sand, coarse to medium, some fine sand, and gravel, dark yellowish brown
307-311	shorts and the deliver he	Sand, coarse to medium, some fine sand, and clay (trace), dark yellowish brown
311-337	26	Sand, coarse to medium, some fine sand, dark yellowish brown
337-380	13	Sand, medium to coarse, some fine sand, grayish orange, and clay (trace to 5%), moderate yellowish brown
350-360	. 10	Sand, coarse to medium, some fine sand, moderate yellowish brown
360-370	10	Sand, coarse to fine, and clay (trace to 5%), moderate yellowish brown
370-3°1	11	Sand, coarse to medium, some very coarse sand, dark yellowish brown
381-386	Sellides bas Iwe	Sand, coarse to medium, some fine sand, and clay (trace), dark yellowish brown
386-410	24	Sand, coarse to medium, some fine sand, dark yellowish brown
410-448	38,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Sand, medium to fine, some coarse sand, moderate to dark yellowish brown
448-458	10	Sand, coarse to medium, and clay (trace), dark yellowish brown
458-478	20	Sand, coarse to medium, dark yellowish brown



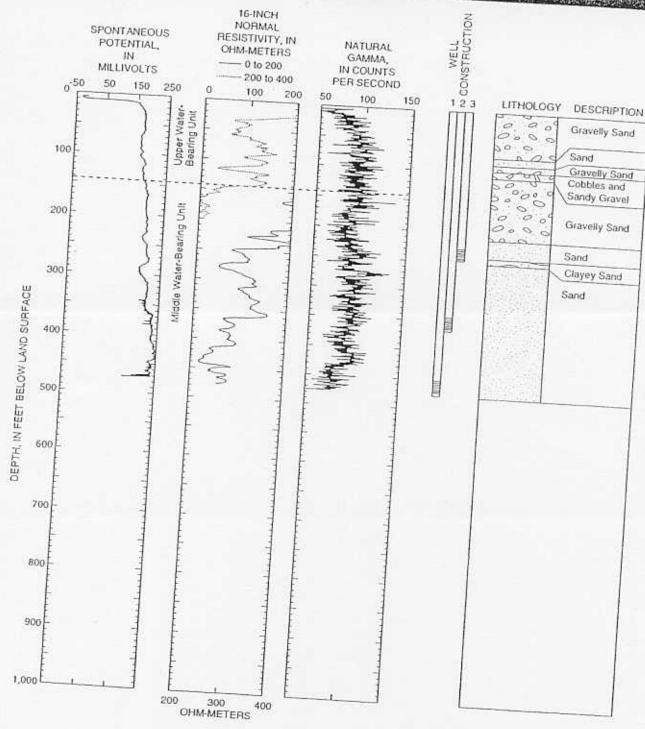


Figure 8—Continued.

VINEYARD AVENUE 1N/5W-28J2,3

HENOMAY.	20	
0-20	20	Sand, coarse, cobbles, very coarse sand, gravel, and medium sand, dar yellowish brown
20-39	19	Cobbles, gravel, very coarse to medium sand, dark yellowish brown
39-63	24	Gravel, cobbles, and very coarse to coarse sand, some medium sand, dark yellowish brown
63-97	34	Cobbles, very coarse to coarse sand, gravel, and medium sand, dusk yellowish brown
97-130	33	Sand, very coarse to coarse, medium sand, cobbles, and gravel, dusky yellowish brown
130-147-	17	Sand, coarse to very coarse, medium sand, cobbles, and gravel, dusk yellowish brown
147-166	19	Sand, coarse to medium, some very coarse sand, gravel, cobbles, and cla- (trace at 152'-156'), dark yellowish brown
166-182	16	Sand, very coarse to coarse, gravel, medium sand, and cobbles, darl yellowish brown
182-195	13	Sand, coarse to medium, and clay (25-40%), some very coarse sand and cobbles, dark yellowish brown
195-233	38	Sand, coarse to very coarse, some medium sand, gravel, and cobbles, dark yellowish brown
233-243	10	Sand, coarse to medium, some very coarse sand, and clay (trace to 5%) dark yellowish brown
243-264	21	Sand, coarse to medium, some very coarse sand, and gravel, dark yellowish brown
264-284	20	Sand, coarse to medium, some very coarse sand, and clay (trace to 5%) dark yellowish brown
284-309	25	Sand, coarse to fine, some very coarse sand, dark yellowish brown
309-322	13	Sand, coarse to fine, some coarse sand, dark yellowish brown, and cla- (trace to 5%), dusky yellow
322-350	28	Sand, coarse to fine, some very coarse sand, dark yellowish brown
350-367	17	Sand, coarse to fine, dark yellowish brown, and clay (trace to 5%), light yellow brown
367-405	38	Sand, coarse to fine, some very coarse sand, dark yellowish brown
405-420	15	Sand, medium to coarse, some fine sand, dark yellowish brown
420-435	11	Sand, medium to fine, some coarse sand, and clay (trace), dark yellowis brown
435-445	10	Sand, medium to coarse, some fine sand, dark yellowish brown
445-453	8	Sand, medium to coarse, some fine sand, and clay (trace), dark yellowis brown
453-498	45	Sand, medium to coarse, some fine sand, pale yellowish brown

Appendix 81

K. Vineyard Avenue site 1N/5W-28J2, 3

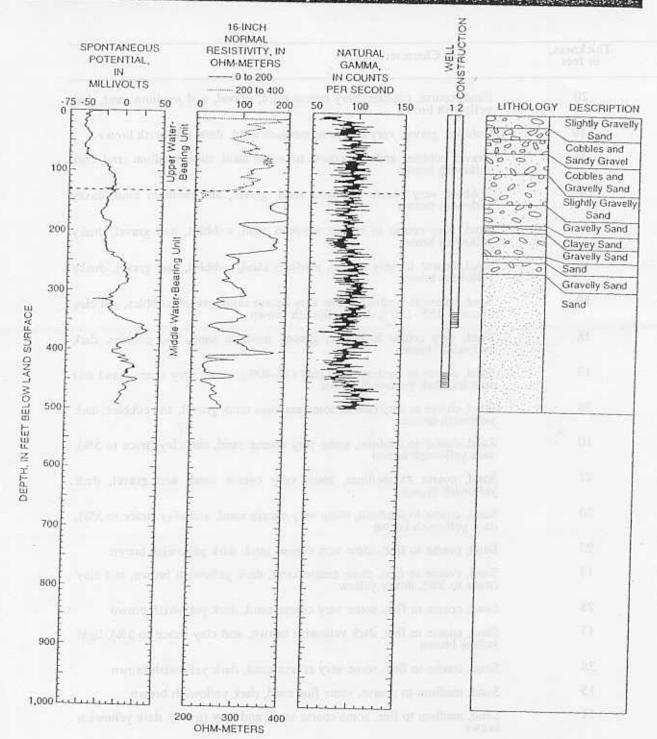


Figure 8—Continued.